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Towards an Improvement of LIS Graduates' ICT Skills and Employability Needs in Kuwait

By

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A Doctoral Thesis
Submitted in partial fulfilment of the requirement for the award of Doctor of Philosophy

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Abstract

The aim of this research was to explore the ICT skills of LIS students in Kuwaiti HE that are potentially defined by the job market. These skills are deemed essential for the employment of LIS graduates in different job market sectors. As a result, the ICT skills of current LIS students, the needs of employers, and the LIS curriculum in Kuwait were all investigated. In addition the factors that had an impact on students' ICT skills were also investigated.

To fulfil the research aim and objectives, mixed research methods were employed. The research subjects were employers, LIS students, and teaching staff. Their views were sought through qualitative and quantitative methods that included: 54 semi-structured interviews; 225 self-administered questionnaires; these were supplemented by three focus groups; and content analysis of relevant web sites, reports, and LIS syllabus to provide further documentation and analysis.

The main findings of the research were: (1) overall the students had knowledge and basic ICT skills, but they lacked advanced searching and internet navigation skills. 85% of the students did not have enough ICT skills; their ICT skills level was self-rated as "intermediate" or "beginner"; (2) the research investigated negative factors such as: unsuitable teaching and learning environment, negative attitudes, social influences, and lack of resources; (3) the students' most preferred teaching and training method was "group training"; (4) the employers identified further ICT skills and non-ICT skills that LIS graduates should possess for employability; (5) gaps were found in the curriculum and in teaching and training the ICT courses such as: course content was inconsistent; did not reflect the needs of the job market and were outdated; an imbalance between theory and practical training, courses had different outline and little use of the English language hindered the students' ICT skills improvement and ICT use. In addition, work placement needed careful consideration.

Recommendations based on the research findings and conclusions were made to the DLIS in Kuwait and stakeholders. Future ideas were identified for further research.

Keywords: Library and Information Science professionals, Information and Communication Technology skills, Kuwait, job market, curriculum, Higher Education, Department of Library and Information Science, LIS employers, LIS students, private sector, public sector, teaching staff.

Publications and Conferences

In the course of completing this thesis, its contents have been drawn on for publications and posters conference presentation by the author:

1. Buarki, H., *et al*, 2009. *Educating Library and Information Science Professionals in Kuwaiti Higher Education* [presentation given at the 16th BOBCATSSS Conference "Challenges for the New Information Professional", Porto, Portugal, 28 January 2009]. <http://en.scientificcommons.org/hanadi_buarki>. (Appendix 1)

2. Buarki, H., Hepworth, M. & Murray, I., 2009. *LIS undergraduates' ICT skills and the job markets in needs in Kuwait* [poster presentation given at the 3rd Saudi International conference "The Spirit of Scientific enquiry", Surrey, UK, 5 June 2009]. <http://www.saudiinternationalconference.org/>. (Appendix 2)

3. Buarki, H., Hepworth, M. & Murray, I., 2009. *LIS undergraduates' ICT skills and the job markets in needs in Kuwait* [poster presentation given at the 75th IFLA General Conference and Assembly "Libraries create futures: Building on cultural heritage", Milan, Italy, 23 August 2009]. <http://www.ifla.org/annual-conference/ifla75/>. (Appendix 3)

==========

Dedication

To the soul and memories of my grandmother; ***Mama Oda.***

To my dear parents: ***Jumah Buarki*** and ***Fotouh Alomani***, who always prayed for me and gave me confidence.

To my husband: ***Wael Almutawa***, who supported and encouraged me through the journey despite the ups and downs.

To my sweet hearts children:

Yousef……..…for bearing the separation
Youser……..for being a great friend
Ganima……for her endless compliments
Fotouh……..……..for her love

To my only sister, brothers, and friends who were always in touch and kept the distant close.

==========

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Finally, I owe a great deal to my family, especially for my husband who has always believed in me and emotionally supported me, and to the love of my children whom for their sake I started and successfully ended the research journey.

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List of Abbreviations

A

AASL	American Association of School Librarians
ACK	Australian College of Kuwait
ACRL	Association of College and Research Libraries
ALA	American Libraries Association
ALISE	Association for Library and Information Science Education
ASIS	American Society for Information Science & Technology
AUK	American University of Kuwait

B

BDL	Bachelor of Documentation and Librarianship
BEL & L	Bachelor of English Language and literature
BHCK	Box-Hill College Kuwait
BIDPA	Botswana Institute for Development Policy Analysis
BLIS	Bachelor of Library and Information Science
BML	Business, Management and Leisure programme

C

CBE	College of Basic Education
CCSCE	Centre for Community Services and Continuing Education
CD-ROM	Compact disc read-only memory
CILIP	Chartered Institute of Library and Information Professionals
CPD	Continuing Professional Development
CSU	California State University

D

DIS	Department of Information Science
DLIS	Department of Library & Information Science
DLS	Department of Library Science

E

EASLIS	East African School of Library and Information Science
ECDL	European Computer Driving licence
ER	Electronic Resources
ETS	Educational Testing Services

G

GAC	Gulf American College
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GPA	Grades Point Average
GUST	Gulf University for Sciences and Technology

H

HE	Higher Education

I

IBE	International Bureau of Education
ICDL	International Computer Driving License
ICT	Information Communication Technology
IFLA	International Federation of Library Associations
IL	Information Literacy
ILL	Inter Library Loan
IT	Information Technology

J

JOCW	Japan Open Courseware Consortium

K

KALIPER	Kellogg–ALISE Information Professions and Education Renewal project
KG	Kindergarten
KISR	Kuwait Institute for Scientific Research
KMBS	Kuwait-Maastricht Business School
KU	Kuwait University

L

LIAK	Library and Information Association of Kuwait
LIM	Library and Information Management
LIPER	Library and Information Professions and Education Renewal project
LIS	Library and Information Science
LIS	Library and Information Studies
LISTEN	Library Information Science Training and Education Network

M

MAIR	Masters Administration of Information Recourses
ME	Ministry of Education
MHE	Ministry of Higher Education
MIT	Massachusetts Institute of Technology
MLA	Medical Libraries Association
MLIS	Masters of Library and Information Science
MMU	Manchester Metropolitan University

N

NCATE-AASL	National Council for Accreditation of Teacher Education-American Association of School Librarians
NISTIC	National Scientific and Technical Information Centre

O

OPAC	Online Public Access Catalogue
OER	Open Educational Resources

P

PAAET	Public Authority for Applied Education & Training
PED	Private Education Department

PC	Personal Computer

R

RGU	Robert Gordon University
RSS	Really Simple Syndication

S

SDI	Selective Dissemination of Information
SLA	Special Libraries Association
SLIA	Saudi Library and Information Association
SMS	Short Message Service

T

TOFEL	Test of English as a Foreign Language
TPU	Tallinn Pedagogical University

U

UNESCO	United Nation Educational, Scientific and Cultural Organisation
UIS	UNISCO Institute for Statistics
UPM	University Putra Malaysia

W

WWW	World Wide Web

==========

Chapter One: Introduction

1.1 Background

Information handling and use have become important in many job activities, particularly in information related organisations. This is largely due to the developments in electronic information resources and communications systems. These developments have meant that employees with Information and Communication Technology (ICT) skills are a necessity in information handling institutions. Education institutions have a responsibility to contribute to improving students' ICT skills that reflect the needs of the job market.

Therefore, in order to have a professional graduate in ICT skills, there is a need to identify and then improve two main elements. These are the students and the educational curriculum and then relate these to the needs of the job market. This study will therefore concentrate on exploring ICT skills in Kuwaiti Higher Education (HE).

Library and Information Science (LIS) curricula worldwide are rapidly changing. Major shifts have been recognised. There are changes in the titles of LIS Schools and the range of courses they offer. In addition, the increasing importance of ICT skills has led to the inclusion of ICT into most LIS courses. ICT skills are becoming more and more essential for LIS graduates. That is why LIS schools have stressed them and included them in most of their courses. To survive LIS graduates need to possess certain ICT skills needed by the LIS job market. These issues will be referred to in the literature review chapter.

LIS is taught as a bachelor degree in one college in Kuwait at the Department of Library and Information Science (DLIS), College of Basic Education (CBE), the Public Authority of Applied Education and Training (PAAET). The DLIS is the only undergraduate programme in Kuwait that prepares LIS graduates for information related employability, maintained under the umbrella of HE. The DLIS strives to fulfil the employment needs of various LIS sectors by equipping its graduates with different skills such as searching information resources, e-cataloguing and classification. As such, students' ICT skills in the department were recognised to be

essential qualities of employment. These skills prepare graduates to use different ICT technologies and to work as professionals. It is for this reason LIS students should possess ICT skills that are required and (assumed to be) agreed upon between the DLIS and employers. As a result, employers have certain job requirements that they need to pass to LIS schools. In return, LIS schools need to revise and change their curriculum to meet the needs of the job market (Minishi-Majanjaa 2007, p.9).

In this context, the need to explore the ICT skills of LIS students in Kuwait as defined by the job market was recognised. This research will investigate the students' ICT skills from their own perspective and from the point of view of stakeholders.

1.2 Research Aim:

The main aim of this research was to explore the ICT skills of LIS students in Kuwaiti HE that are potentially defined by the job market.

1.3 Research Objectives:

The following objectives have been identified to achieve the research aims:

- To identify the current level of the students' ICT skills.
- To identify the main factors influencing students' acquisition of ICT skills.
- To identify methods of teaching and training ICT skills and compare them with ones preferred by students.
- To identify LIS graduate ICT skills needed by employers.
- To investigate the current ICT courses in terms of gaps in teaching and market needs.

1.4 Research Questions:

The following questions were addressed in order to answer the research aims and objectives:

- What is the students' current situation regarding learning ICT skills?
- What are the factors affecting students' learning ICT skills?
- What are the ICT skills that employers expect from LIS graduates?
- What are the students' ICT skills training needs?
- What form should ICT training take to develop ICT skills among all students?

1.5 Significance of the research

With the rapid change of ICT and its use and applications in LIS programmes, it is crucial for HE professionals to know the ICT skills that graduates should possess. Particularly, it is crucial for students to possess updated ICT skills and receive the appropriate training.

ICT is becoming important in everyday activities in all sectors and is becoming important in LIS education, as it facilitates and assists access to information in an accurate and more convenient manner. In order to provide graduates with better ICT skills in DLIS at Kuwait, it is fundamental to know their recent ICT skills and how they are improved through their LIS education. Therefore, the purpose of the research was to distinguish to what extent this is the case in Kuwait in terms of what is currently offered through LIS education, the role of consulting professional associations' standards and the needs of employers. It will also investigate what would facilitate or inhibit change and adoption. The uniqueness of this research is that it provides, through its literature review, a comprehensive study of ICT skills and their integration into the LIS curriculum. This revealed an absence of research in the area of ICT skills in the LIS curriculum, particularly in Kuwait, and has enabled this gap in current research to be explored. The research is also the first in-depth study on the DLIS in Kuwait; it will contribute to the field of information science and mainly to curriculum revision and will take into account the factors that would inhibit improvement, moreover:

- The study will identify factors that promote and those that hinder students from approaching and learning to use ICT.
- This study will assist decision makers in deciding whether to revise or add to their current programme by new curricula development. And thus can be generalised and applied to other LIS programmes sharing the same educational system.
- Provide guidelines and recommendations to DLIS in Kuwait and other LIS programmes' of the Arabian Gulf countries[1] towards improving the content of

[1] Kuwait, Saudi Arabia, Bahrain, Oman, Qatar, and United Arab Emirates also referred to as the Gulf Cooperation Council (GCC) countries.

their syllabus and redesigning their curriculum, since they share the same social, cultural and educational backgrounds.

- The study will investigate employers' perception and needs of graduates ICT skills and suggest ways for improvements.
- This research will add to the LIS literature in the area of ICT since there has been no extensive research done in the area in Kuwait.

Figure 1.1 represents the research framework that will be applied throughout the following chapters. Chapter One, this chapter, has identified the research aims, objectives, questions, and significance. Chapter Two is the literature review that discusses different aspects of ICT including ICT education, common trends in LIS, professional associations, employers' ICT skills needs and challenges and barriers. Thus, it sets the importance of the research's aims and objectives and provides evidence for the purpose of the study (Creswell & Plano Clark 2007). Chapter Three sets out the historical background of education in Kuwait, it tends to give an idea of the educational levels and system in Kuwait, the Ministries of Education (ME) and Higher Education (HE), the Kuwaiti LIS programmes and the application of ICT into the educational system of Kuwait. In Chapter Four the philosophy of the research, research design, methodology, and techniques are highlighted. Chapter Five, Six and Seven provides the qualitative and quantitative analysis of the research data. The last two Chapters, Eight and Nine, present the research discussions, conclusions and recommendations.

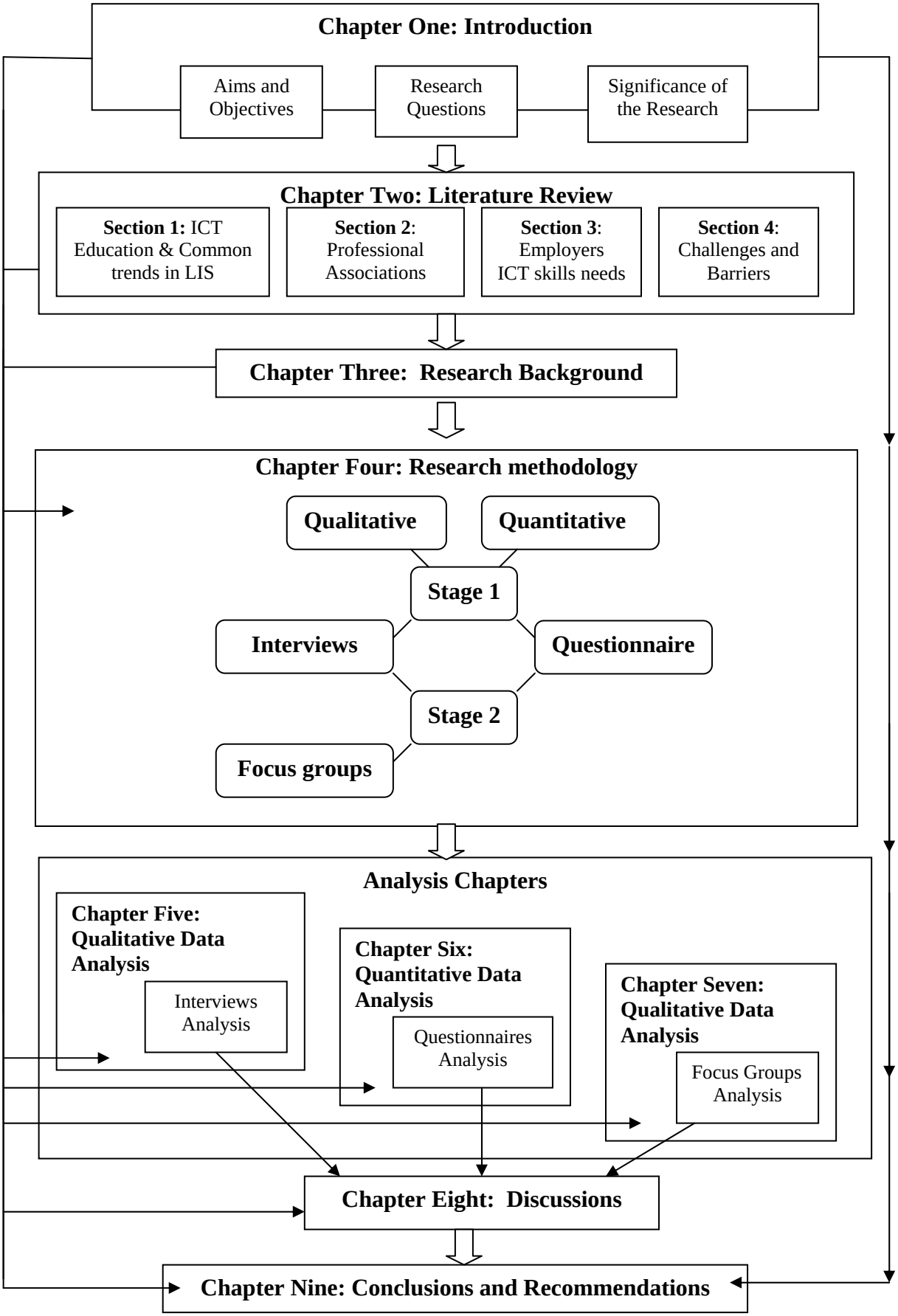

Figure1.1 The research framework

Chapter Two: Literature Review

2.1 Introduction

ICT has attracted much academic and non-academic research in the last few decades due to its role and importance in education, institutions' performance and enhancing employability. This chapter presents and discusses the ICT skills related literature from the point of view of HE in four sections. Section one defines ICT skills then it discusses communication technology, ICT skills, ICT education, attitudes, ICT education in Kuwait and common trends in LIS. Section two considers the impact and role of professional organisations'. In section three the needs of employers of ICT skills is discussed. Section four outlines the challenges and barriers faced by the adoption of ICT into LIS programmes and then collaboration was suggested as a solution. The chapter is summed up with concluding remarks. Figure 2.1 shows the main elements of the reviewed literature.

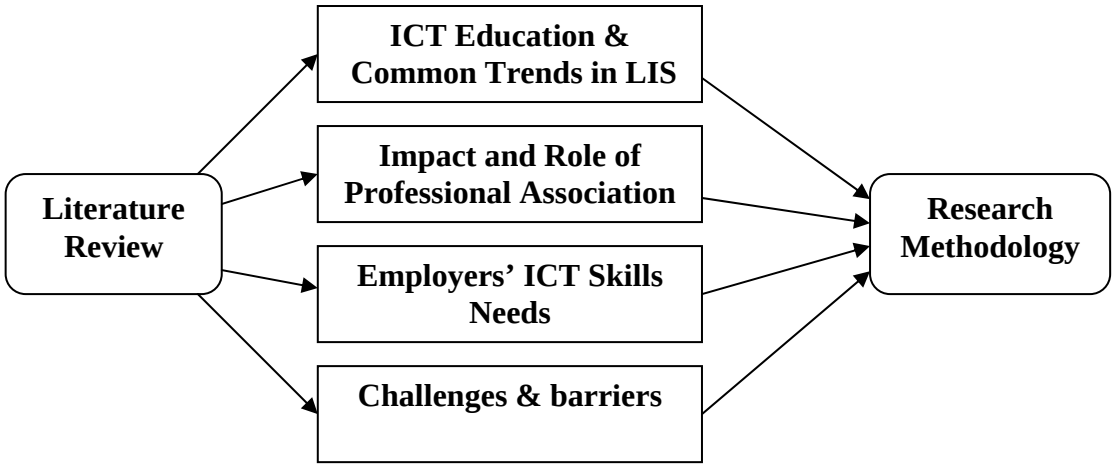

Figure 2.1 Literature review framework

Technology, Information technology (IT) and Information and communication technology (ICT) have all become areas of debate in the last few years. However, some Kuwaitis believed that technology education was not important because it can be transferred from developed countries (Albannai 1997, p.175). Technology was defined, in this article, as the techniques used in performing the services that we associate with technology. Technology education included courses such as design and technology, IT, and computer studies. It was noticeable that although technology can be transferred from developed countries, it should be applied at its very beginning

stages at least at the start of its implementation and learned step by step. On the other hand, others believed that adopting technology is very costly. Albannai (1997, p.180) has indicated that technology education in Kuwait should be developed so that Kuwait can take part in international technology enhancements and that it should be included as a compulsory course in Kuwaiti Education. Although this study was conducted back in 1997 and recommended the implementation of technology in schools, still a gap in the curricula has been recognised and resulted in not preparing students for HE. As a result a gap has been also recognised between graduates' ICT skills and employers' needs in Kuwait. Nevertheless, ICT skills in Kuwait needed consideration since there has been little literature produced. In reviewing the related literature some studies were found regarding this topic, this will be discussed in this chapter.

2.2 ICT skills definition

It is important to define and understand ICT, as it will be used in many parts of this research. ICT has been defined as "the integration of computer and communications technologies for the creation, processing, dissemination and transmission of information" (Al-Qallaf & Al-Azmi 2002, p.289). It was also defined as "any technology used to support information gathering, processing, distribution and use" (Beynon-Davies 2002, p.584). IT "consists of hardware, software, data and communication technology" (Beynon-Davies 2002, p.584). The Association of College and Research Libraries (ACRL), a division of the American Libraries Association (ALA), defined it as skills that "enable an individual to use computers, software applications, databases and other technologies to achieve a wide variety of academic, work-related, and personal goals" (Association of College and Research Libraries 2006).

However, the following definition of ICT skills has been chosen for this research: the minimum ICT skills that LIS students need to access, evaluate, communicate information, and to produce documents electronically by the use of computers and communication technologies. These ICT skills include:

- Using office applications (Word, Excel, and others.);
- Using and managing library automated systems (acquisition, catalogues,

circulation and current awareness);

- Maintaining in-house databases;
- Designing and constructing web pages;
- Databases, online and internet searching to retrieve information.

IT has become widely spread to broaden the term to include the field of communication technology, discussed below, so that people attend to use the abbreviation ICT. IT and ICT are now used interchangeably. ICT will be used throughout the research to represent the same term.

2.2.1 Communication technology

The use of communication (computers, faxes, phones, and others) by means of technology (emails, bluetooth, conferencing and others) has evolved to become included in daily life and procedures. As a result communication technology is being used in education and in the modernisation of libraries services such as electronic cataloguing and acquisition (Ani, Esin & Edem 2005, p.701). In Russia the LIS education underwent a change due to the increase in active usage of telecommunication technology (Donchenko & Kerzum 2006, p.181).

Communication technology has also improved the efficiency and effectiveness of research organisations, such as the Botswana Institute for Development Policy Analysis (BIDPA), in communication and information delivery. The use of e-mails to collaborate and communicate has reduced delay. Research teams were able to work on the same documents electronically with efficient speed at a low cost. Researchers could easily access databases. Internal office communication and management has also been accomplished through the use of the internet. Receiving and ordering information was made in a less consuming time and documents were purchased online (Ojedokun & Moahi 2005, p.137).

Ani, Esin & Edem (2005, p.706) found that people in developing countries have little access to information and communication networks. Out of 17 libraries surveyed, only four provided internet access. They recommended the acquisition of computer

networks among the libraries to share and communicate data and to provide a link to all academic resources.

In Kuwait, as elsewhere, computerised telecommunication is becoming a trend in producing daily work procedures and communicating. While a study reported that the presence of ICT in public libraries in Kuwait was 10-15 years behind the international norms in terms of equipment and telecommunications (Al-Qallaf 2002), the use of the internet (emails, blogs and forums) and Short Message Service (SMS) has become essential in all organisations as means to communicate knowledge and information (United Nations Economic and Social Commission for Western Asia 2009, p.3). Internet subscribers in Kuwait have dramatically risen through 2000-2006 (Figure 2.2).

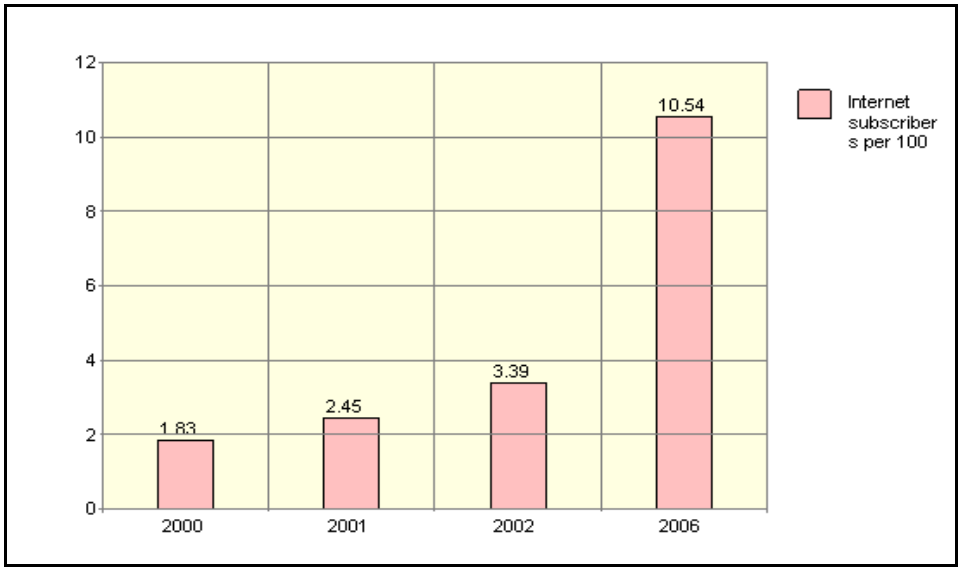

Figure 2.2 Internet subscribers in Kuwait (United Nations Economic and Social Commission for Western Asia 2006)

2.2.2 Information and Communication Technology skills

During the 1990s Massey-Burzio (1991) emphasised that librarians should be computer literate and be able to use systems in their working areas. Such as understanding operating systems, databases (in order to understand how databases are composed) and entering records in Online Public Access Catalogue (OPAC) (to better understand its capabilities). They should also have a basic understanding of how the use of computers is important, this will help them in understanding how computers work. This understanding will help librarians to cooperate with systems staff,

evaluate programs, and choose different technological solutions to solve different information problems. They should be able to continue learning and developing their skills even after graduation (Massey-Burzio 1991, p.73).

However, still during the 21st century Kavulya (2007, p.220) stressed the need for information professionals equipped with a variety of ICT skills such as webpage construction, database design, internet use and evaluation and information use and retrieval. He recommended that LIS institutions should redesign their courses and improve their training.

Hanson-Baldauf and Hughes-Hassell (2009, p.6-9) also suggested that there was a need to improve students' ICT skills (communication/collaboration technologies, production and design technologies, virtual-modeling technologies, file-sharing technologies and social networking technologies), since it has become a centre point of the 21st century LIS education. The respondents in their study came from 46 ALA accredited LIS programmes and 33 programmes approved by the National Council for Accreditation of Teacher Education-American Association of School Librarians (NCATE-AASL), aged 18-25. The results indicated the highest level of technology competency (levels three or four) was in using tools such as blogs, emails, instant messaging and others. While all age groups indicated emailing and presentation tools (such as Microsoft Power point) as the highest level, emergent tools such as social networking and file sharing tools were rarely used in courses. In addition, the respondents agreed upon the integration of technology into the instruction of the LIS schools' curriculum. They were unprepared to integrate emergent Web 2.0 technologies (such as blogs, podcasts, wikis, Really Simple Syndication (RSS) feeds and social networks) into their teaching. It was recommended that students should be required to use these technologies in assignments and understand the value of networking with teachers and librarians using these technologies. LIS schools' teaching staff, however, needed to integrate new emerging technologies into their courses and develop their skills.

2.3 ICT Education

ICT skills have been therefore highlighted as key skills that future librarians should have (Morgan, S. 1996, p.42). ICT education has become an important part in HE

strategic planning due to its role and impact in learning, research and need in the workplace. Moreover, LIS educators, academics, professionals and associations have stressed the importance and integration of ICT into the LIS curriculum. The following sections present and discuss these issues.

2.3.1 ICT integration by LIS programmes

LIS departments have been experiencing change and have been determining how to cope with it. As a result, ICT courses need to be changed to include ICT (computer use and file management, word processing, spreadsheets, database, using the internet and emailing) (King, McMenemy & Poulter 2006, p. 274). Such change has been witnessed in new types of teaching and learning using ICT and in developing new courses in LIS education.

Ur Rehman, Abu Bakar, and Majid (1998, pp.130-132) identified the trends that could affect professionals' life for the next decade. The most prominent trend was the application of ICT. ICT adoption included: increasing interconnectivity through networks; depending on the use of computers and ICT in libraries; the use of electronic resources, multimedia technology, image technology, and CD-ROM, emergence of virtual library, on-line acquisition, and the development of in-house databases.

Beheshti (1999) argued that the advances in ICT have had a great influence on LIS education, in revising its curriculum. LIS programmes throughout the United States and Canada have undergone major curriculum changes in response to technological achievements (computers and telecommunication technologies, particularly the Web). The Association for Library and Information Science Education (ALISE) statistical report showed that more than 50% of LIS programs have revised their curricula. Beheshti mapped the curricula of 44 programmes of the ALA accredited programmes to determine the nature of LIS education in the United States and Canada. A list of 57 concepts was created to find out the "concentrations of subjects in the curriculum". It was found that the concept "technology" was the most common of all the concepts. The concept "technology" was covered by all the 44 Masters of Library Information Science (MLIS) programmes, included in the study. It indicated a change in the curriculum of MLIS programmes to include it in its courses. Some programmes gave

more coverage to this concept, as shown in their course outlines, than others. The results showed that the main knowledge and skill competence taught in the MLIS programmes was technology. This resulted in the programmes' change from librarianship to Information Science (Beheshti 1999).

He (1999, p.1) also investigated the LIS curricula in USA by looking into the ICT courses that were taught in four LIS schools, trying to find out the change that has occurred in their curricula. The four schools were: School of Information and Library Studies, University of California Berkeley; School of Library and Information Science, University of Iowa; School of Library and Information Science, Louisiana State University; and School of Information Science, University of Tennessee. He (1999, pp.6-8) found that more than one third of the courses were ICT-oriented. This indicated that the schools were keeping up with the fast and vast changes of ICT since the 1990's. All four schools included at least seven courses (Appendix 4) of the thirty-six ICT-oriented courses including information storage and retrieval, information systems, library automation, multimedia and system analysis, database systems, online library systems and database management.

In Africa, Aina and Moahi (1999b, p.224) found that additional courses including a detailed ICT component, ICT hardware and software, database, Information systems and systems development should be added to the graduates' curriculum of the DLIS of the University of Botswana. The respondents indicated that they were practising word processing, information searching, database management and CD-ROM searching at their work place. They (88.9%) regarded ICT as very relevant and recommended practical ICT training among other courses to be incorporated into the programme. It was also recommended that the programme should be restructured to offer ICT related activities.

The previous studies (Beheshti 1999, He 1999, Aina & Moahi 1999b and Ur Rehman, Abu Bakar & Majid 1998) showed the review of the curricula back in the 1990s which resulted in the integration of ICT into the curriculum. More studies appeared during the 20th and 21st century. The integration of ICT into the curriculum has not only changed the names of the courses, it has transformed the LIS programmes. This

transformation was seen in the programmes' names, degree titles and course offerings (Ur Rehman 2000a, p.53), as follows.

Ur Rehman (2000b, p.151) found that the use of ICT (not specified) in India and Pakistan have had very little to offer and was very basic in library education programmes. In addition, Mahmood (2002, p.35 and 2003, p.103) surveyed seventy public and private sectors librarians in technical universities/colleges/institutes in Pakistan. He reported that seven out of the ten most important skills chosen for future academic librarians were from the ICT category (this includes using e-mail, the internet, databases, e-cataloguing, circulation, planning for library automation, training in and managing automated systems). This, he added, showed that managers expected the use of ICT in academic libraries. Using ICT was rated the first among seventy five skills that were divided into six categories: management competencies; resource development competencies; technical services competencies; reference and information services competencies; information technology competencies; and general competencies.

Another study that shows the need for integrating ICT into the curricula was conducted by Callison and Tilley (2001). They analysed job announcements of the Association for Library and Information Science Education (ALISE) and indicated that most of the surveyed teaching staff have showed their interest to teach and research the area of "information systems: analysis, design and evaluation" to allocated courses in ICT (Callison and Tilley 2001, p.188). Furthermore, job announcements and teaching staff descriptors indicated a shift towards the employment of Information Science and technology expertise. Although the descriptor ICT was included as a general descriptor it was the most frequently used in these teaching staff job announcements. Indicating that technology related jobs were in demand and that Information Science programmes could offer the training for such jobs (Callison and Tilley 2001, p.199).

LIS programmes started to offer online courses that make use of ICT. An example of this was presented by Virkus and Wood (2004, p.324). They examined the issue of change at three LIS departments including the Manchester Metropolitan University (MMU), the Robert Gordon University (RGU) and the Tallinn Pedagogical University (TPU). Interviews were conducted with twelve representatives about

innovation and changes that have been made, attitude to change and the impact of change on pedagogy and on the departments studied. Changes that have occurred on the curriculum according to Virkus & Wood (2004, pp.325-327) were:

- Introduction of ICT to assist in teaching and learning: this included the improvement of courses and the use of "learning management systems" such as WebCT (an online system that was used to teach one undergraduate course and components of other courses across all the programmes and one of its features was the non-attendance of the lecturer) and IVA (an electronic delivery platform developed by TPU'S Educational Technology Centre, which has been replaced by WebCT). These systems have helped to deal with staff and students workloads, develop communication (use of conferencing technologies and use of electronic platforms), helped in improving teaching methods and the students' learning.
- The development of new courses (not specified by Virkus & Wood) and new concepts in curricula due to the realisation of new learning needs: distant education, joint degrees with other departments and joint research and development projects have all emerged. As such was the integration of expertise teaching staff from related disciplines; participating in international associations such as IFLA's Section of Education and Training; and the development of the curriculum based on experience and guidance of expertise and partner universities.

The main reason of innovation and change, in this study, was the need for "continuous improvement and to maintain efficiency, effectiveness and economy" (Virkus & Wood 2004, p.327). The introduction of ICT in education has helped to reduce daily routines and duties; helped teachers in spending more time on the formation of their lessons; helped staff to spend more time on individual coaching; managed staff and students' workloads; and improved communication through the use of WebCT and IVA learning management systems. ICT was a common characteristic of teaching and learning in all the three departments. Two departments paid more attention to carrying out distant education courses while the other has used ICT to deliver courses existing on-campus. Moreover, ICT integration requires

motivation and capability for change from teaching staff, students and policy-makers (Virkus & Wood 2004, pp.325-328).

A further example where the LIS education changed to include ICT components was in Croatia. Horvat (2003, pp.227-230) presented an outline of the LIS education at the University of Zagreb. She pointed out that new technological changes have had an enormous influence on the LIS education. New topics concerning ICT have been introduced to the curriculum. When ICT was first introduced to the curriculum, there was a need to learn the basics of how to use a PC, a text editor, databases and internet. The teaching staff also had to acquire and learn things before they could teach them to students.

Another example that illustrated the integration of ICT, following course schedules analysis of 42 American LIS programmes, was by Xu (2003, p.219). He revealed that more than 20% of the courses offered in these programmes are ICT-related, and that these LIS programmes are offering varieties of ICT courses (such as ICT in general, system design, Internet/Web technologies, information storage and retrieval, database design and applications, electronic publishing, operating systems, programming based systems, e-commerce technologies, introduction to computer networking). The study indicated that it is not easy to differentiate between most LIS courses in terms of which were ICT-related and non-ICT-related, for most of the LIS courses include ICT elements. ICT in this study referred to ICT in general such as introduction to ICT, key technologies, and management of ICT (Xu 2003, p.211).

While the previous literature (Beheshti 1999, He 1999, Aina & Moahi 1999b, Mahmood 2002 and 2003, Callison and Tilley 2001, Virkus & Wood 2004, Horvat 2003 and Xu 2003) showed the importance and implication of ICT in LIS programmes, in contrast, Ur Rehman, Abu Bakar, and Majid (1998, p.130) showed, having surveyed managers of the largest LIS organisations in Malaysia, that library managers recognised that there was lack of ICT skills in Malaysian libraries and software applications. In addition, it was also found that the curriculum in the Arabian Gulf countries schools was dated and ICT was not evident in most of these programmes (Ur Rehman, Al-Ansari & Yusuf 2002, p.24)

It is apparent that many LIS programmes worldwide have introduced new ICT courses (such as Computer literacy, Information systems, Introduction to ICT, management of ICT, and Library automation) into their curriculum. In Africa ICT was included into all LIS programmes and sometimes offered as a specialisation. Such as the Moi University where Information Science is combined with Computer Science, the University of Botswana where a degree of Information systems was offered, and the University of Pretoria School of ICT where students were offered three majors of Information Science, Computer Science, Information Systems and multimedia courses (Ocholla, Bothma 2007, pp.65-69). Most Sub-Saharan LIS African schools developed ICT courses and merged them with traditional courses which were only taught theoretically because of poor funding and human resources (Minishi-Majanjaa 2007, p.9).

However, library Schools in USA underwent this process to stay abreast with the new ICT advancements. According to U.S. News and World Report the top three LIS graduate programmes in USA are University of Illinois at Urbana-Champaign, the University of North Carolina at Chapel Hill, and Syracuse University (Top LIS Programs Unveiled 2007). The undergraduate degrees of these programmes are affiliated by ALISE (Graduate School of Library and Information 2002).

Surveying the Information Science Undergraduate Programme Guide and the schools' web pages the following results were found: the LIS Undergraduate programmes, presented in Table 2.1, have included minor degrees (such as Graduate School of Library and Information Science/Institute for Communications Research and the University of North Carolina at Chapel Hill-School of Information and Library Science) and major degrees (such as Syracuse University - School Information Studies) of ICT into their curriculum. This will eventually produce graduates with better ICT skills meeting employers' needs. It will also enable graduates to be employed in different information settings. They will be able to perform daily routines more easily, search different databases, use various automated systems and even adopt new ICT as it emerges. Having different ICT skills and knowing how to utilise them will also make them able to continue their higher education and will supply them with skills needed by employers.

Table 2.1 Top three American LIS programmes' ICT offerings at undergraduate level

LIS School	Degree Title	Mission	ICT core courses
University of Illinois at Urbana-Champaign **Graduate School of Library and Information Science**	**Information Technology Studies**	Understanding more about the information age, the role of information, and the impact of information technology on society. Complementing the area of studies with information and technology skills. Knowing where to find information, how to use it strategically. Complementing technology skills with an understanding of the role of information in organizations and in society. Exploring design, access, and use of ICT.	• IT and Organizations. • Social Aspects of Information Systems. • Literacy in the Information Age.
University of North Carolina at Chapel Hill – **School of Information and Library Science**	**Information Systems**	Provides students with an understanding of computing, networking, multimedia, and electronic information resources. Complements the major field of study by offering knowledge, skills, and experience using these technologies. Designed for undergraduate students to develop their knowledge and skills in the use and design of information systems.	• Retrieving and Analyzing Information. • Tools for Information Literacy. • Information Systems Analysis and Design. • Introduction to Database Concepts and Applications.
Syracuse University – **School of Information Studies**	**Information Management and Technology**	Focuses on users and user information needs for integrating information and information technology into organizations.	• Introduction to Computer Networking. • Applications of Information Systems. • Introduction to Database Management Sys.

LIS programmes have changed, revised, and added courses into their curriculum in order to keep up with the vast ICT change worldwide. Library schools internationally have undergone this change to produce graduates with different ICT skills ready to be employed in different libraries, information centres, and thus responding to the job market requirements. The following subsection will review some ICT skills related literature.

2.3.2 ICT skills and competencies

LIS sectors need to adopt comprehensive skills in areas of information literacy, information management, information technology, information searching, and communication skills (Ocholla & Bothma 2007, p.73). Information professionals and LIS educators need to prepare themselves to possess and be equipped with a range of competencies and skills to provide the "highest quality information services". Such competencies include being familiar with library automation, database creation, multi media application, networking, and library website design. In addition to, having the ability to use ICT such as the internet to utilise the enormous amount of information (Rath 2006, pp.36-39). Therefore, ICT skills include the very essential ones starting with word processing, database searching and the development of current awareness services to advanced ones that require special training such as designing websites and computer programming.

Morgan (1996) has discussed ICT-related skills and competencies under two headings one of them was ICT management. It included word processing; desktop publishing; use of bibliographic software packages; spreadsheets; graphics packages; bulletin-boards; dexterity with data and file manipulation; maintaining World Wide Web (WWW) files; ICT trouble shooting; and familiarity with different operating systems. These skills would enable librarians to handle information extensively and transfer them to their users (Morgan 1996, p.48).

Ur Rehman, Abu Bakar and Majid (1998) found, surveying employers of LIS organisations in Malaysia, that there was a shortage of professionals who have ICT capabilities (such as increasing interconnectivity through networks, reliance on computers, use of electronic resources, emergence of the virtual library and remote access by users, on-line acquisition and development of in-house databases), in addition to management skills. It was recommended, in terms of ICT along with other recommendations, that there should be suitable recognition of the role of the information specialist and the change from "professional" to "information manager" or "information scientist" (Ur Rehman, Abu Bakar & Majid 1998, p.140). However, in another study in Malaysia, respondents were consistent in expressing their concern about the lack of desired ICT skills among professionals (Ur Rehman 2000b, p.15).

In libraries of the Arabian Gulf, the set of skills of the middle and top managers were identified. These skills could become the foundation for the design of information study programmes. Ur Rehman, Abdul Karim and Chaudhry (1998, pp.12-15) identified these skills using a list of 70 competencies to gather responses about future employment needs in the profession. The competencies were divided into five functional areas: management; information technology applications; resource development; information services; technical services and generalities. In addition, they (Ur Rehman, Abdul Karim & Chaudhry 1998, p.22) identified information technology competencies as follows:

- planning for library automation;
- converting the manual library functions to automated mode;
- using relevant developments in IT such as e-mails, imaging, databases, CD-ROM; designing and maintaining of in-house databases;
- designing and maintaining in-house databases
- managing automated systems;
- evaluating the performance of the automated systems;
- designing and participating in larger information systems;
- using word-processing, graphics and spreadsheets.

Results indicated that the higher level competencies were focused in the four of the five functional areas (management, information technology applications, resource development, and information services). The skill allocation in functional areas provided guidelines for curriculum development of undergraduate's programmes considering the roles graduates have to play in the emerging information job market (Ur Rehman, Abdul Karim & Chaudhry 1998, p.26). Moreover, Ur Rehman argued that ICT (use of computers in library services, automation of housekeeping operations, and database design and management) was one of the requirements for entry-level professionals of academic libraries in the Arabian Gulf countries and that it provided the foundation for redefining the curricula (Ur Rehman 2000b, p.71).

Another study that identified the needed ICT skills (basics of ICT, word processing, e-mailing, internet and intranet, graphics, presentation and publishing, spreadsheets, project management, design and development of databases, system maintenance,

design and development of web applications, system analysis and programming) was conducted on Malaysian libraries heads. Abu Bakar (2005, p.270) recognised that the respondents needed to further improve their skills in ICT basics. LIS programmes should provide training in the area of internet and intranet and further development in the creation of multimedia. He added that the failure of LIS schools to provide courses such as publishing homepages, spreadsheets and management skills, database development and administration and web page design was a barrier that caused the deficiency of these skills, thus these needed further improvement.

Blankson-Hemans and Hibberd (2004, pp.271- 278) found, surveying world-wide information professionals, that the highest achieved "must have" competencies for professionals were: use of office applications (Word, Excel and others); online and Web searching skills; reference interview skills; and selection and evaluation of online services. Their findings indicated that despite the fact that academics realised the trends and issues in the commercial sector and believed that their programmes were tackling the required skills, practitioners were certain that graduates should gain the required skills (communication, interpersonal and research skills, time management, marketing, public relations and computer skills) during their course education. Furthermore, changes made to LIS curricula to deal with these requirements have not been achieved effectively to prepare "graduates for immediate absorption into the workforce" (Blankson-Hemans, Hibberd 2004, p.269).

The need and spread of ICT usage in LIS education in sub-Saharan Africa was analysed by Minishi-Majanjaa and Ocholla (2004, p.129). Data was collected from 51 LIS schools using questionnaires and content analysis. Results indicated that sub-Saharan Africa needed people possessing ICT skills (systems analysis and programming from basic to management use) in every aspect this included all operational levels from basic ICT use to systems management. Most of the surveyed LIS schools had an important ICT content in their curricula. Twenty nine ICT modules were identified and grouped into five categories: general ICT knowledge, storage/retrieval technologies, network technologies, communications and Library automation. The modules were required within the LIS programmes and only 39% of these modules combined both the theoretical and practical approach. Most of the schools do not use ICT a lot for research nor use it for online activities because of the

infrastructure scarcity, while its intensive (60%) use was for academic administration. Internet access was available, but 52% of the LIS schools experienced downtime repeatedly (Minishi-Majanjaa and Ocholla 2004, pp.198-203). Most schools have set up plans to provide staff with ICT competency; better ICT infrastructure; staff development; ICT policy; ICT accessibility for students and staff; curriculum development; collaboration and networking for resource sharing; distance learning; practical training for skills development; and integration of ICT in LIS education. These plans needed adequate funding. The authors recommended future research to be conducted in the scope of each of the ICT module offered by the LIS schools; and the needs of LIS students and staff of ICT (Minishi-Majanjaa and Ocholla 2004, pp.204-206).

The literature above has illustrated ICT skills that are required by LIS schools. Although these skills vary, they all incorporate the use of ICT to perform them. LIS programmes need to recognise these skills and incorporate them into their courses. Hence, the curriculum needs to be developed to include these needed skills. In order to practice these skills the integration of different ICT related courses is needed. Hence attitudes of students towards the practice and use of these skills needs to be sought through the literature.

2.3.3 Attitude towards ICT

Luan, Abu Bakar and Hong (2006, pp. 226-235) examined the affects of the students' centred-learning approach in a separate ICT course on pre-service teachers' attitudes. The ICT course, Information Technology in Education, was taken by students majoring in Education at the University Putra Malaysia (UPM). The course supported students with ICT knowledge and basic ICT skills (such as spreadsheets use, word processing, internet and database searching, presentation software use, web browsing, constructing homepages and using telecommunications). The survey instrument was used on 102 students. Ninety six of them agreed that the course had changed their attitude towards ICT. The information and skills the students gained from the course made them more self-assured, interested in ICT and they recognised the importance of ICT in education.

Additionally, the results were supported via interviews with a further six students. The students were asked about their attitudes towards ICT after taking the course. Their attitudes were more positive after taking the course. They felt more confident with computers, enjoyed using them, they were able to teach others on their use, work together and they recognised that they should be trained to integrate ICT into their teaching and learning process. The students were also asked about other skills they gained from the course beside ICT skills. All six students said that they were able to produce improved quality coursework because of the knowledge and skills they learned from the course and were also ready to solve problems they encountered (Luan, Abu Bakar & Hong 2006, pp. 231-232).

Adekunle, Omoba and Tella (2007) investigated forty one automated Nigerian libraries, to find out the librarians' attitudes towards ICT use and application (automated cataloguing, circulation, information retrieval, electronic document delivery and CD-ROM). The findings indicated that librarians had a "positive attitude towards the use and implementation of ICT in their libraries". It also indicated that the librarians' previous "training and knowledge of ICT influenced their attitudes towards it" (Adekunle, Omoba & Tella 2007, p.3).

Alqallaf (2006, pp.172-174) looked into the perceptions of ninety seven academic and research librarians in Kuwait, she found that the respondents felt positive towards the application of technology (library automation and working with computers) into their work procedures and considered that it progressed their job performance. Although formal training was not provided, the respondents felt positive to learn new technologies. It was recommended to provide training curricula to equip librarians with the skills needed and provide technical support to improve the workplace. In another study in Kuwaiti public schools, Almahboub (2000, p.65) surveyed the attitudes towards computer use and gender of 562 students. He found that Kuwaiti females had a more positive attitude and a stronger correlation towards computers than males. He also found that students who had computers at home had a more positive attitude towards their use.

Students' and librarians' attitudes towards ICT were positive. ICT adoption, nevertheless, is faced with barriers such as lack of funding, training and lack of

teaching staff proficiency. The following section reviews some barriers that are affecting ICT adoption in Kuwait.

2.3.4 ICT education in Kuwait

A survey of 61 teaching staff internet users at the College of Basic Education (CBE) showed weakness of their ICT skills to use the internet. The lack of connectivity was another barrier. It was found that 64% were internet users, 71% needed training and 23% do not use the internet at all. Main uses of the internet were for emailing (21%) and 20% used it to find information. The study recommended presenting ICT skills training, literacy courses, providing internet connectivity and ICT resources such as computers to teaching staff (Abdel-Motey, Al-Anzi 2003, pp. 47-54).

Al-Ansari (2006, p.795-801) conducted a similar research at Kuwait University (KU) on 154 teaching staff. He found that 7.1% did not use either the internet or a computer. 143 respondents used the internet frequently for emails (94%) and search engines (84%). Although KU was planning to move towards e-learning, the study indicated a scarcity in providing formal training opportunities. However, the respondents were aware of their need to update their internet use skills. The researcher recommended that KU needed to develop its infrastructure and to provide training packages to improve the teaching staff ICT skills.

In another study, Ur Rehman and Mohammad (2002, p.10) reported that there was a crucial lack in undergraduates' library skills (using the card catalogue, OPAC, CD-ROM databases and other sources) at the College of Science at KU. Among these skills was the use of computers. The students were asked about their level of knowledge and use of computers (using internet, CD-ROM, e-mail, programming and word processing). 80% of them were either comfortable or very comfortable and 20% pointed out that they were not comfortable. The study concluded that students entering the college needed library instruction and it was recommended that an intensive course on library ICT skills should be developed (Ur Rehman & Mohammad 2002, pp.16-17). Accordingly, although Al-Anzi (1995, p.244) has recommended the same findings, back in 1995, that ICT courses should be taught in all Kuwaiti High Schools to improve students' skills, ICT skills has not been fully

improved in Kuwaiti education (Buarki *et al.* 2009, p.10 and Ur Rehman & Alfaresi 2009, p.614).

In examining the availability and use of ICT (the integration of computer and communications technologies for the creation, processing, dissemination and transmission of information) in public libraries in Kuwait, Al-Qallaf and Al-Azmi (2002, p.289) reviewed specific areas related to ICT including hardware/software, patterns of connectivity such as LANs, Internet, factors impending the development of ICT and future projections regarding its use. Results of their survey of 23 Kuwaiti public libraries showed that the number of libraries that used computers was small, only eight, and that 15 libraries were without any type of ICT. Computers were insufficient and unequally distributed with only thirteen public access points (Al-Qallaf & Al-Azmi 2002, p.303). This indicated that librarians in Kuwait, during the time of the study, did not use computers or ICT resources in their daily work. They depended on manual procedures due to the unavailability of these resources.

Concerning internet usage and connectivity, two (25%) libraries responded positively and six (75%) libraries had no connection. Reasons for internet usage were: to access online databases; to answer reference questions; expand the range of resources available in the library; use electronic mail service; access discussion groups; and provide internet services for public use. From the 15 libraries that responded with regard to potential use of the internet, 13 (86.7 %) showed a high level of interest and would like to connect to the internet (Al-Qallaf & Al-Azmi 2002, pp.294-299). This indicated that employees in these libraries had the skills and the potential to use ICT, but again ICT resources were not available.

Furthermore, of the 167 staff employed in these libraries, only three (1.8%) held a LIS master's degree. The rest of the staff was of non-professional status, who was expected to work as paraprofessionals or professionals. One of the most obvious conclusions drawn from this study was that the presence of ICT in public libraries in Kuwait is 10-15 years behind the international norms in terms of equipment, telecommunications, and human resources. The authors recommended that staff must be educated technologically; public libraries administrators need to take a proactive position and cooperate with the ME training and development centre to prepare staff

for current and future ICT skills; and hire professional staff with degrees in LIS, computer science and information systems (Al-Qallaf & Al-Azmi 2002, pp. 303-307). Public libraries in Kuwait, this also applies to other countries in the region, lacked ICT trained staff and professionals. LIS programmes in a country are usually responsible of providing such skilled employees through teaching and training their graduates. These graduates, having ICT skills, are then employed in libraries and similar organisations.

Ur Rehman and Marouf (2008, pp.17-22) analysed the perceptions of the graduates of the MLIS programme in KU. They found that the teaching staff received a mean score of 3.95 (on a point-five satisfaction Likert-scale). None of the respondents marked it as least satisfied and it received the highest assessments. The graduates seemed to be satisfied with the courses conducted in the MLIS programme. However, elective courses, work placement and comprehensive examination received the lowest scores. They recommended that the department of MLIS should redesign its elective courses; work placement should be performed at the private sector where there is more exposure to information management settings; it was suggested that essential changes in the delivery of comprehensive examination should be made; and the computing facilities (internet, printing, workstations and ICT laboratory) should be updated and improved.

The above literature showed a scarcity in the Kuwaiti LIS education in human resources, in formal training of ICT skills, lack of connectivity and resources and lack of English language proficiency. This has resulted in a crucial lack in undergraduates' skills and a lack in ICT trained staff and professionals. These studies suggested redesign in courses, work placement and offering training and resources to improve ICT skills. However, trends in LIS programmes have been introduced to provide better education as will be discussed next.

2.4 Common trends in LIS

LIS education, internationally, has been discussed and studied continuously to improve the curricula, professionals, and LIS graduates' status. Accordingly changes were made in the field. These changes included changes in the curriculum, teaching staff, courses offered, and teaching method. The following section will present and

analyse issues that are taking place in worldwide to improve LIS programmes' education, particularly ICT.

2.4.1 Curricula changes

The recent developments in ICT and its role and impact on the workplace have influenced LIS to change in order to cope with these changes. Thus, to meet the needs of the job market and the technology changes. The following section presents and discusses these changes.

2.4.1.1 Changes in LIS programmes' titles from LS to IS

Most LIS programmes in the United States have shifted their programmes' title to include the term information rather than just library. There was also greater emphasis on the use of educational technology and computer knowledge (Mortezaie & Naghshineh 2002, p.16). Hence we saw, to a great extent, Departments of Library Science (DLS) changing to Departments of Library and Information Science (DLIS) in the 1980s and to the Departments of Information Science (DIS) in the 1990s (Ocholla & Bothma 2007, p.63). School of Library Science will not exist as schools, under the name of "Library science" as they used to be. These schools are changing to School of Library and Information Studies (LIS), School of Library and Information Science and other names related to Information Management/Technology and Knowledge Management (Qendelgi & Alsamraei 2007, p.5).

In the United States, Callison and Tilley (2001, p.181) analysed descriptors from job announcements, self-descriptions of teaching staff, and course descriptions of member schools of the Association for Library and Information Science Education (ALISE) during the period of 1988 to 1998. They pointed out that LIS programmes have tried to change their curriculum to meet the needs of the profession. Library schools have looked for new specialised teaching staff to employ and have added new courses into the curriculum. It was noticed that the major shift was from the "traditional areas of librarianship" to the broader area of Information Science (Callison & Tilley 2001, p.199). 20% of Library schools in US and 22% in UK changed to School of Library and Information Studies and 38% in US and 29% in UK changed to School of library and Information Science (Qendelgi & Alsamraei 2007, p.5).

Another study that discussed similar trends and pointed out problems in LIS education in Asian countries was based on content analysis of presentations and discussion sessions of international workshops. It was held in Tokyo as part of the Library and Information Professions and Education Renewal project (LIPER), in order to; highlight key trends and issues of LIS education. Miwa (2006, p.18) invited speakers from China, Korea, Singapore, Taiwan, and Thailand. The speakers discussed their countries' LIS education, qualification systems for librarianship, curricula changes, and employment opportunities. The following trends of LIS education in Asia were identified (Miwa 2006, p. 25):

- The term Library had been eliminated from most of the LIS programmes;
- most of the schools included a graduate level to their programmes;
- a decrease in school library education (except in Thailand);
- less employment of graduates because of their exceed of job market needs;
- graduates seeking employment in national and academic libraries rather than the public library due to its low social status and salaries;
- employers' misunderstanding the capabilities of LIS graduates.

Rath (2006, pp.35-37), in India, also highlighted the need to change LIS education, in order to occupy a central position in the educational process worldwide. He emphasised that the 21st century technology has transformed LIS education and led to the following changes:

- library professionals have become information professionals;
- traditional libraries are increasingly becoming digital libraries;
- library cooperation leading to consortia;
- collection development to content development;
- traditional education to web based education;
- Information society to knowledge society.

These trends have raised a number of issues for LIS educators including: academic, management, technological and legal issues; balancing education, research and practice; the need for national accreditation agencies; and internationalisation of LIS education (Rath 2006, p.38). The author concluded that it is time for LIS schools to

"produce qualitative problem solvers" and "effective information managers" having a wide variety of skills (such as managing information organisation, managing information resources, managing information services and applying information tools and technologies) to meet the "highest demand in the information sectors" (Rath, 2006, p.40). In order to survive the LIS professionals need to move towards being "Information professionals". LIS departments are, therefore, shifting towards changing the focus of their departments (Ocholla & Bothma 2007, p.63).

LIS programmes have changed, however, to consider the new skills and knowledge needed by the profession and have introduced new courses as will be discussed in the following section.

2.4.1.2 Changes in LIS programmes

As some LIS programmes have changed their titles, others have changed their programmes' courses to provide more courses related to "information areas" such as knowledge management, multimedia, information technology and other related areas. (Ocholla & Bothma 2007, p.64). Moreover, there has also been a shift towards ICT-based information/knowledge management courses. Although LIS programmes have tried to offer ICT based courses, most of them are facing problems (such as the increasing number of graduates; not finding jobs in the library market; not having enough theoretical practise; over-emphasising some courses; linking undergraduate programmes to graduate ones in terms of complementing one another) in expanding their LIS education to meet the conditions for information professionals in an ICT-based society (Miwa 2006, pp.23-25). LIS programmes, however, are moving towards teaching new courses. They are moving more towards "future oriented programmes" that are described in the schools' mission, goals and objectives (Abdullahi & Kajberg 2004, p.353).

A study that emphasised the need of curriculum change was on the LIS programmes in Hungary. The programmes needed a transformation, as in any other field, due to the dramatic changes that the country experienced in politics, the economy, technology, and society. These changes have affected the need for technological change; the demand for quick and reliable information; and the need for information professionals to manage this information. Palvolgyi and Toth (1996, pp.13-16)

surveyed the DLIS at Berzsenyi College focusing on its curriculum and course development. The ongoing Tempus, joint European project, made it imperative to reconsider the LIS programmes and alter important changes focusing on the establishment of a national Library Information Science Training and Education Network (LISTEN). Its activities included the integration of LIS courses, the inclusion of ICT and the retraining of LIS staff in curriculum and course development. Weaknesses of previous programmes appeared to be (Palvolgyi & Toth 1996, pp.16-17):

- LIS education in Hungary was declining: few staff members in some departments and there was little organisation in courses;
- courses offered were too "heavily theory and discipline-oriented": the modern and traditional library skills were not included in the courses offered;
- teaching courses depends on "individual staff-member": there was no team approach in teaching;
- ICT was not integrated into courses.

The authors suggested designing a new basic curriculum that centred on the following (Palvolgyi and Toth 1996, p17):

- cooperation in professional training between Hungarian LIS schools;
- development and flexibility of curriculum structure and content;
- design and implementation of distant learning materials;
- applying information literacy programmes;
- collaboration and internationalism with other LIS schools in seminars, courses, training materials, and professionals.

Additionally, a new mission statement and strategy was developed allowing flexibility in the LIS education programme. It focused on: increasing the number of students; cooperation on the national and international level; helping students develop new skills (as problem solving, learning foreign languages, communication skills and technical skills). The authors suggested designing a new curriculum to improve LIS education in Hungary. They also suggested improving students' skills such as communication skills, organization skills and transferable skills. Internationalism was also suggested as something that should be incorporated in seminars, courses, and

training materials. This would not only improve the standard of LIS education but it would help form a network that would help the swap of suggestions for change (Palvolgyi and Toth 1996, p.20).

Gollop (1999, pp.385-394) discussed the change of LIS curriculum from a different perspective. She suggested that LIS programmes should employ teaching staff and students of different racial, ethnic, and cultural backgrounds. Gollop also discussed issues of diversity in LIS education programmes and how these issues can be dealt with positively to serve students and their future users better. The author argued that LIS schools must try hard to prepare their graduates to be employed in multicultural environments. This means, as she suggested, changing some courses in the LIS schools curriculum such as (Gollop 1999, pp.390-392):

- Introducing a course assigned to a variety of issues of LIS education: courses that have a "broader cultural perspective" and that addresses multiculturalism and diversity;
- Arranging units in certain courses (e.g., reference, cataloguing, collection development) around multicultural/diversity issues;
- Inviting guest lectures to discuss topics such as collection development or the concerns of library services and programming.

Ur Rehman (2000a, pp.53-55) discussed the curricula of leading education programmes in the United States, by scanning their curriculum on their Web sites. His review identified a number of courses that have been added in the areas of: Information organisation, Information use and user, Information resources and Information services. ALA accredited programmes such as Illinois, Indiana, North Carolina, Syracuse, Michigan, Pittsburgh, UC at Berkley, and Florida State have added new courses. These programmes are related to the social context of Information technology applications (dealing with the role of ICT in reshaping society, organisation, work, home-life, communication and industry); changes in use and user behaviours; human-machine interactions; new policy issues at different levels; and economic aspects of information and ICT. As a result, most of these programmes have changed their names, degree titles and course offerings.

Moreover, LIS courses' content needs to be revised regularly to ensure the relevance of its delivery and subject matter (Middleton 2003, p.48). Nevertheless, Ur Rehman, Al-Ansari and Yusuf (2002, p.15) surveyed the LIS situation in the Gulf Cooperation Council (GCC) countries, using a mailed questionnaire. The results indicated that three of the six schools were revising their curriculum and one school had just completed the procedure. Four schools, out of the six, reported little change in the curriculum. The change included the addition of courses (such as fieldwork, ICT, Information Marketing and Economics, Medical Libraries, Research Methods in LIS, Public Relations in LIS, Independent Readings, Research Project, Internet Applications, Virtual Libraries), the deletion of some courses (such as History of Libraries), and the merger of some others (such as Audio-visual Materials with ICT). There is, however, a need for curriculum revision to reflect changes in the LIS field, the job market and so the bachelor's graduates of these schools may not face serious unemployment problems in future (Ur Rehman, Al-Ansari & Yusuf 2002, p.24).

Another study concerning LIS schools in the GCC showed that the majority of education programmes in the region, that were producing undergraduates for the job market had changed little and were outdated (Ur Rehman & Al-Ansari 2003, p.172). The authors recommended that the schools' curriculum needs to be revised to reflect changes in the marketplace. These changes would be achieved by revising their degree programmes, curriculum, teaching staff research and publication, academic and institutional resources and the application of ICT (Ur Rehman & Al-Ansari 2003, p.178).

Blankson-Hemans and Hibberd (2004, pp.269-271) studied the commercial sector and tried to determine how well the kinds of courses provided by LIS schools meet its needs; their importance to the development of the LIS professionals and the profession in general. Course descriptions of 77 world wide universities web sites, where accredited LIS programmes are offered, were examined on global basis and compared with the results of the competencies offered. The changes that have happened to LIS through the last eight years did not prepare graduates to work as professionals. The authors recommended that academics should change LIS courses to introduce new courses of a business focus (such as Information Services Management, Information and Knowledge Management, Business Information

Management, Small Business Management, and Management Behaviour Skills) and market them; practitioners need to work with academics and to act as visiting fellows for a number of courses; and practical experience should be offered (Blankson-Hemans & Hibberd 2004, pp.277-279). LIS academics need to realise the change to include new courses needed and to provide training during LIS education on these courses.

However, with the rapid change of the Information setting, it has been necessary for the profession to be updated as viewed by Donchenko and Kerzum (2006, pp.181-184). They provided a brief account of the reorganisation of LIS education in Russia, during the transition period of the social and economic life of the country. The LIS education had undergone a change being affected by the changes in HE in the country. And also due to the shift in professional activities; forms and organisation of library work; and the electronic resources that have enlarged the volume of the resource base available to a reader. In 2002, the Library Faculties were renamed LIS. Simultaneously, the implementation of the new State Standard for the qualification of LIS started. It aimed at training professionals in dealing with traditional and electronic information resources (unspecified). LIS schools in Russia conveyed the same obligatory syllabus to their students except that courses can be changed in accordance to their preferences. Faculties constructed their own courses in response to the job market need and teaching staff's availability. It aimed at improving the knowledge and skills of librarians by helping them carry on with the shifting and complex prerequisites of the world.

Hallam (2006, pp.41-42) reviewed the current trends in the LIS education in Australia including student numbers, teaching staff staffing and curriculum issues. He argued that the nature of LIS curriculum, being multidisciplinary, required knowledge and skills that combine aspects of Information technology, management, psychology and education. He added that in contrast to the USA, there is no formal published data in Australia to assist students measuring the quality of LIS schools and their staff. The paper concludes by considering some of the current curriculum issues for educators to consider. These included ensuring that the content of LIS courses is regularly evaluated, revised and updated to respond to the quickly changing world; educators need to consider the career-long learning requirements of the LIS profession; and it

was considered crucial that LIS courses blended theory and practice (Hallam 2006, p.49).

Curricula changes, as discussed in the previous literature, appeared to be in LIS programmes' titles (Mortezaie & Naghshineh 2002, Ocholla & Bothma 2007, and Miwa 2006). Other changes were in LIS programmes to meet the profession needs (Callison & Tilley 2001, Miwa 2006, and Rath 2006). In addition LIS programmes have changed to offer new courses (Donchenko & Kerzm 2006, Ur Rehman 2000, Hallam 2006, Palvolgyi & Toth 1996, Gollop 1999, Blenkson-Hermans & Hibberd 2004 and Ur Rehman, and Al-Alansari & Yusuf 2002).

2.5 Summary

This section has discussed common trends worldwide in LIS education. This included curricula changes; changes in LIS programme names from LIS to IS; and changes to include new LIS courses. It also included the drive to include ICT; ICT integration studies by LIS programmes, ICT skills and competencies and attitude towards ICT.

The trends that occurred included adding new courses to the curriculum such as knowledge management, multimedia, and ICT (Ur Rehman 1999, Ocholla 2007, and Miwa 2006). As well as including ICT in all aspects of a LIS programme due to the rapid change of the information setting (Donchenko & Kerzum 2006). Moreover curricula revision to include new LIS courses (Hallam 2006, Palvolgyi & Toth 1996, Gollop 1999 and Blankson-Hemans & Hibberd 2004). These trends and others (such as: new specialisations of teaching staff; adding graduate levels to programmes; graduates seeking employment in other non-librarian organisations) have emerged in response to the needs of the job market and have led to improved LIS education, forming a LIS international infrastructure and adopt to the world's changing information setting. However, ICT application was the most prominent trend in LIS education (Ur Rehman 1998).

In addition, LIS programmes appeared to be offering ICT courses (such as Introduction to ICT, Information Searching, Key Technologies, Library Automation, Management of ICT, introduction to computer networking and others). These courses have been integrated into the curriculum to reshape it (Virkus & Wood 2004), in

response to technological change (Beheshti 1999 and Horvat 2003). He (1999) and Ocholla (2001) stated that graduates should possess ICT skills and capabilities (such as using different software applications, word processing, CD ROMS, electronic resources, computer systems, Internet applications, handling emails). However, because of the importance of ICT some LIS schools emphasised its use and top LIS schools in USA have included ICT courses in their curriculum (Xu 2003). Yet, the integration of ICT courses has made LIS schools produce graduates possessing different ICT skills such as database and online searching, web page designing, systems handling, computer programming and Office applications.

Nevertheless, some of the studies called for the need for library instruction courses to be offered during school education (Ur Rehman & Mohammed 2002), others emphasised and enhanced ICT courses to develop ICT skills of professionals (Ur Rehman, Abu Bakar & Majid 1998). It was surprising to know that some of these institutions, in undeveloped countries, lacked any kind of ICT facilities (Abdel-Motey & Al-Ansari 2003) and even connectivity. That's why professionals working or studying in these institutions lacked ICT skills that are a necessary LIS qualification.

Moreover, students' and teaching staff attitude were positive towards the use and application of ICT that they recognised their importance (Su Luan, Abu Bakar & Hong 2006, Minishi-Majanjaa & Ocholla 2004 and Virkus & Wood 2004). On the other hand, ICT implementation in Kuwait was found to be limited. For there was a lack of qualified ICT teaching and library staff (Al-Anzi 1995), undergraduates' ICT skills and library skills (Ur Rehman & Mohammad 2002), and ICT resources (Al-Anzi 1995 and Ur Rehman & Mohammad 2002).

As new ICT applications emerge LIS curriculum needs to be revised to fit up-to-date ICT courses, depending on the needs of the job market or LIS schools will fail to provide students with the appropriate skills. Academics need to realise the needed ICT skills of different sectors and organisations to include them in their syllabus. LIS programmes need to change and develop new ICT courses that deliver the needed ICT skills in order to survive in the constantly changing information world. Furthermore, possessing ICT skills will expand the extent of LIS students' interests

and encourage them to practise a wide range of information and library related activities, hence, having more chance of employment and continuing education opportunities.

The next section of the literature review will look at professional organisations, their impact on the curriculum and the guidelines/standards they provide in relation to ICT. LIS schools need to use these guidelines/standards to help them develop their programmes and keep them updated.

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2.6 Professional associations

Professional authorities ensure that LIS schools' "curriculum development and quality control" are properly examined and reviewed (Ocholla & Bothma 2007, p.56). Furthermore, programmes' recognition is important for standardization (Ocholla 2000, p.41). Several professional bodies have worked and produced professional guidelines for LIS education programmes, though they are intended to address the graduate and the professional level. These guidelines are essential as they are proposed to be used internationally. The section below reviews and discusses the role of professional bodies in shaping LIS education and their impact on the syllabus. Then it highlights ICT skills in professional association's guidelines, particularly those sections concerned with ICT.

2.6.1 Professional associations providing guidelines

The International Federation of Library Associations (IFLA) is the global professional association that represents the concerns of libraries, its users, and the information profession (International Federation of Library Associations 2007). It has guidelines, for Professional Library/Information Educational programmes, that provide a framework for LIS schools. These guidelines are intended to be followed by LIS programmes to structure their curriculum, teaching staff, students, administration and financial support, and instructional resources and facilities (International Federation of Library Associations 2002). Although these standards are intended to address the professional and graduate level, they would be adopted as a guide for developing an undergraduate LIS programme.

Another example is the American Library Association (ALA) its mission is to promote guidance for the development of library, information services and the profession to improve learning and information access (American Library Association 2007). The ALA has Standards for Accreditation of Master's Programmes in Library and Information Studies, 1992. These guidelines provide guidance for educators; show which LIS programmes are of good status; describe the

crucial qualities of programmes of education that prepare library and information professionals; and identify the essential components of library and information studies programmes (American Library Association 2006b).

The Association for Library and Information Science Education (ALISE) is another professional body that has provided opportunities for library educators to share their ideas, discuss related issues, and to solve common problems (Association for Library and Information Science Education 2003). ALISE does not have Guidelines but has produced the KALIPER report, discussed in section 2.5.3.

One more example is the Chartered Institute of Library and Information Professionals (CILIP). CILIP is a professional body that accredits LIS programmes in England, Wales and Scotland. CILIP is used as a guide by professionals in the field and it lays standards for the profession, ensuring that programmes are recognised. It evaluates courses' significance to existing LIS practices and whether these courses meet the standards of the profession (Chartered Institute of Library and Information Professionals 2006). CILIP specified the accreditation criteria in its "Accreditation Instrument" (Khoo, Majid & Chaudhry 2003, p.133). The document states LIS programmes' accreditation criteria, processes, and procedures that are applied to all accreditation requests for all LIS courses in UK and outside it[2]. CILIP evaluates LIS courses in UK using its Accreditation Handbook and the CILIP Body of Professional Knowledge (Chartered Institute of Library and Information Professionals 2009).

2.6.2 Impact of professional associations on LIS syllabus

LIS schools' curriculum is influenced, examined and shaped by professional associations (Frank 2007). Thus, IFLA states that LIS programmes should regularly review their curriculum: "a process of formal curriculum review should take place on a regular basis. This review should be informed by input from employers, practitioners and professional associations, as well as students and faculty" (International Federation of Library Associations 2002). The purpose of reviewing the curriculum is to update it and include changes to it such as the addition of new courses or deleting dated subject ones. In addition IFLA Guidelines state that LIS

[2] Hanadi Buarki e-mail to an Adviser, Qualifications and Professional Development at CILIP, 14 July 2007.

programmes should respond to the needs of a country, and meet its educational and professional accreditation prerequisites according to the standards in the country (Khoo, Majid & Chaudhry 2003, p.134).

The ALA also suggests the need to revise and evaluate LIS programmes so that:

> The curriculum is continually reviewed and receptive to innovation; its evaluation is used for ongoing appraisal, to make improvements, and to plan for the future. Evaluation of the curriculum includes assessment of students' achievements and their subsequent accomplishments. Evaluation involves those served by the programme: students, faculty, employers, alumni, and other constituents (American Library Association 2006b).

LIS curriculum needs to be developed in accordance with graduates' needs. Library Schools should try to change their curriculum according to the profession's needs by revising its courses (Alemna 1999, p.40). Tenopir (2000) argued that associations such as the SLA, MLA, ALA and others were looking into the LIS curricula, what it comprises, and what it should comprise in future to ensure that LIS programmes are carrying on with the knowledge needs of the field. Changes have been made to improve the curriculum, develop distant education programmes, and modify the name of the schools to show these changes. New LIS curriculum changes included courses that centre on people (such as ethics and information needs) and on technology (such as networking and internet applications).

2.6.3 ICT skills and competencies in professional associations' guidelines

Tenopir (2000) has claimed that professional organisations were concerned that LIS programmes may not be teaching up to date skills and that good library schools need to equip their graduates with "broader knowledge" that will permit them to perform well in the changing information job market. The term "broader knowledge", as she clarified, indicates that besides the specific skills LIS schools need to provide knowledge. This knowledge is broader than the specific skills necessary to be employed in a first LIS profession. It includes theories and knowledge about the role of information in society, human information seeking and information policy[3].

IFLA has listed the following core skills in its Standards. ICT were included within most of the skills (Khoo, Majid & Chaudhry 2003, p.135):

[3] Hanadi Buarki e-mail to Carol Tenopir, 30 January 2007

1. The Information Environment, Information Policy and Ethics, the History of the Field.
2. Information Generation, Communication and Use.
3. Assessing Information Needs and Designing Responsive Services.
4. The Information Transfer Process.
5. Organization, Retrieval, Preservation and Conservation of Information.
6. Research, Analysis and Interpretation of Information.
7. Applications of Information and Communication Technologies to Library and Information Products and Services.
8. Information Resource Management and Knowledge Management.
9. Management of Information Agencies
10. Quantitative and Qualitative Evaluation of Outcomes of Information and Library Use.

CILIP has detailed lists of core areas (Appendix 5), the ICT core skills related were only selected they included: "the specification, identification, analysis, implementation, evaluation and utilisation of manual and electronic systems and tools" (Khoo, Majid & Chaudhry 2003, p.136).

The ACRL has set "Information Literacy Competency Standards for Higher Education". Part of these standards clearly identify important ICT skills as those that "enable an individual to use computers, software applications, databases, and other technologies to achieve a wide variety of academic, work-related, and personal goals" (Association of College and Research Libraries 2007).

LIS American accredited programmes were shown to have curricula that corresponds to the latest draft proposed core competencies. It appeared that 53 (94.6%) of 56 ALA accredited programmes have had courses that dealt with the eight competencies (McKinney 2006, p.1). The draft described these eight "core competencies" that were expected of a LIS accredited programme graduate. Among these competencies was "Technological Knowledge". Technological Knowledge and other competencies reflected the knowledge and skills of a newly LIS graduate and not a trained librarian. The competency "Technological Knowledge" was defined and comprised the following (American Library Association 2005):

- Demonstrates a comprehension of current information and communication technologies, and other related technologies, as they affect the resources and uses of libraries and other types of information providing entities.
- Has basic knowledge of the concepts and processes related to the assessment and evaluation of the specifications, economic impact and efficacy of technology-based products and services.

- Understands and can apply the principles of techniques used to continuously track and analyze emerging technologies to recognize relevant innovations.
- Demonstrates proficiency in the use of standard information and communication technology and tools consistent with prevailing service norms and professional applications.

McKinney (2006) conducted research using course descriptions and online syllabi of 56 ALA accredited programmes in LIS institutions. It showed that the competency Technological Knowledge was fulfilled in required courses by 37 (66.1%) programmes out of the 56 programmes. Technological Knowledge was also a required or an elective course in 56 (100%) programmes. Moreover, eight programmes were sampled to test their course offerings in the fall of 2005. It was found that the competency Technological Knowledge was offered by seven (87.5%) of the sampled programmes.

2.6.4 Professional Associations' Divisions concerned with ICT

Professional associations such as IFLA, ALA, CILIP and ALISE have recognised the importance of ICT into the educational process. The implication of ICT for LIS programmes has been acknowledged by these associations to ensure that professionals acquire the needed ICT skills. Nevertheless, divisions/chapters were formed to support this.

IFLA has a Management and Technology Division that covers Information Technology. This section serves to support the application of ICT to library and information services "…in all societies, through activities related to standards, education and training, research, and the marketplace" (International Federation of Library Associations 2006b). Another ICT related division of IFLA is the Education and Research Division. It has an Information Literacy (IL) section. The section focuses on different aspects of IL such as "…the use of computers and media in teaching and learning… partnerships with teaching faculty in the development of instructional programmes…. the training of librarians in teaching information and technical skills" (International Federation of Library Associations 2006a).

The ALA's divisions that are concerned with the issue of ICT are the Association of College and Research Libraries (ACRL) and the Library and Information Technology Association (LITA). The ACRL has set "Information Literacy Competency Standards

for Higher Education". These standards present a structure for measuring the information literate individual, they include ICT knowledge as well as more generic skills and knowledge. They presented competencies for students that could be used as a framework to help them control their interaction with information. To apply these "standards fully, an institution should first review its mission and educational goals to determine how information literacy would improve learning and enhance the institution's effectiveness" (Association of College and Research Libraries 2007). LITA develops and aids in the implementation of ICT in libraries. It provides ICT programmes (such as Internet/Intranet Technology, Desktop Applications, Website Development Tools, Apple Customer Training, Microsoft Training, and Novell Training) ICT continuing education opportunities and publishes articles on different aspects of ICT (American Library Association 2006b).

CILIP has established the Information Literacy Group to agree on a definition of information literacy to be used by its members. The definition was composed and supported with links on skills and competencies (Chartered Institute of Library and Information Professionals 2006). In its "Introduction to IL" CILIP declared that:

> IT and ICT often are used without any attributed definitions; some see ICT and Information Literacy (IL) as deeply intertwined, with the term 'e-literacy' sometimes used to convey the union of the two, while others see no need for a distinction…. CILIP does not subscribe to the view that all these terms are synonyms (Chartered Institute of Library and Information Professionals 2009).

CILIP views ICT skills as different from IL. It has an IL Group that has defined IL and listed skills and competencies related to it. Although CILIP has a Training and Development Department that organises ICT and internet skills workshops, it does not provide any definition or standards for ICT competencies. However, CILIP describes ICT skills in its Body of professional knowledge as "generic and transferable skills" (other skills such as knowledge management and applications environment were also mentioned) that distinguish information professionals than those working in other fields as follows "basic ICT skills such as word-processing, databases, spreadsheets, email and Internet use, together with a knowledge and understanding of how ICT is used in organisations and communities" (Chartered Institute of Library and Information Professionals 2009).

In addition, major ICT related courses have been added to the LIS curricula in UK such as Information Technology, Information Management, Commercial Information, and Users' Communication skills, but the curricula are not planed by UK professional associations. However these associations play a considerable role in the progress of LIS programmes in UK (Mortezaie & Naghshineh 2002, pp.15-16).

ALISE does not have a division nor a section that is concerned with ICT application or usage. Nevertheless it has published the KALIPER report. It gives positive conclusions on the status of LIS education finding it an energetic, forceful, and an altering field that has undertaken a range of initiatives. The report identified six trends that are shaping curricular change (Association for Library and Information Science Education 2000, pp.2-5):

1. LIS curricula are addressing broad-based information environments and information problems.
2. A distinct core of skills and commitment has taken shape that is predominantly user-centred.
3. LIS schools and programmes are increasing the investment and infusion of ICT into curricula (this will be discussed in detail below because it germane to the topic of this research). ICT integrates all aspects of the LIS curriculum. Programmes should adopt all new available technologies. ICT, as it appears in the report, included a variety of software applications such as: online searching, Web design, integrated media production, creation of database applications, computer-supported collaboration and usability testing. Students should be able to increase their access to knowledge and create knowledge resources in different formats. This needs qualified skilled staff, more space, and purchase of hardware and software.
4. LIS schools are experimenting with the structure of specialisation within the curriculum.
5. Instruction is offered in different formats.
6. Curricula are expanding into related degrees at the undergraduate, masters, and doctoral levels.

The report furthermore, lists factors that are forcing LIS programmes to change their curriculum:

> (…) the demands of students, employers, graduates, and professional associations for graduate competencies; growth and expense of supporting emerging technology; internal campus relationships and positioning; availability and/or presence of faculty with new subject expertise; competition from other LIS programmes; and availability of financial support for innovation (Association for Library and Information Science Education 2000, p.8).

In fact the report "provides a blueprint for success for those schools that may not be keeping up, a picture of education in a vital profession, and is an important recruitment tool" (Tenopir, 2002).

2.6.5 The need for Professional Associations

The lack of professional associations, in some parts of the world, may lead to a lack of curricula revision. Some LIS programmes internationally lack these associations in their countries or they lack being part of a local or an international professional association. An example of this can be seen in Southeast Asia, where cooperation projects aimed at improving the quality of education programmes through local systems of accreditation. During the time of the study, 2006, there was no accrediting system in these countries. These countries pursued different educational systems and their views about accreditation varied. It was expected that some countries could "use accreditation guidelines for securing adequate resources and may not pursue formal accreditation" (Chaudhry 2006, p.3). The author believed that international associations like ALA, ALISE, and IFLA could play a significant role in enhancing quality improvement and eventually creating a regional system for accreditation.

Similarly, Ur Rehman, Al-Ansari and Yusuf (2002, p.24) found that LIS schools in the GCC countries experienced scarcity of monographic and periodical resources. This reason alone would fail these schools if they undertook an accreditation test. It also indicated that these schools were not going through any regular accreditation programmes. The authors suggested developing standards for these schools to follow and also the establishment of a local professional organization.

Ur Rehman (2007) denoted the modes of evaluation as self-study and external reviewers' evaluation. His findings indicated that the DLIS, CBE Kuwait, programme

conducted a self study and went through an external review in 2000 and has covered all their aspects. The outcome of the review exercise suggested changes in the definition of a new strategic plan, in admission policies, in the provision of resources, in the instructional approaches and in the curriculum. The DLIS reported no changes during the last five years, mid 2007. The study also asked the perception of the programme of an accreditation and certification body. The need was affirmed and that the assessment should be conducted every five years at the GCC countries level.

The lack of professional associations that would serve as an accrediting institution in the Arabian Gulf and Kuwait is, it could be argued, one of the factors that have weakened the educational status of some LIS schools in the area. There are some associations in the area but they do not accredit LIS programmes, the following are examples. The Special Libraries Association (SLA) Arabian Gulf Chapter is a professional association in the Arabian Gulf and it is concerned with serving the Arabian Gulf community and information professionals in the area through organising conferences and workshops (Special Libraries Association Arabian Gulf Chapter 2007). The Saudi Library and Information Association (SLIA) is another example of a regional professional association. It provides and develops opportunities for library employers to contribute to the scientific progress of the profession and publicises the role of the library (Saudi Library and Information Association n.d.). Al-Ansari and Conaway (1996, p.37) and Ur Rehman, Al-Ansari and Yusuf (2002) have recommended the establishment of a local library association in Kuwait. The Library and Information Association of Kuwait (LIAK) association was formed in 2005. It aims to raise the interest and research in the area, holding seminars and conferences, and developing information services and libraries in Kuwait (Library & Information Association of Kuwait n.d.).

All of the above mentioned associations do not provide any curricula guidance, development or accreditation to LIS schools in the region. In comparison to the USA and UK where the existence of professional associations such as: ASLIB, ALA, SLA and ASIS have enhanced library and information knowledge (Mortezaie & Naghshineh 2002, p.20). It is believed that extensive evaluation of LIS programmes is essential to see whether the standards of professional associations are being met and to recognise areas of improvement (Khoo, Majid & Chaudhry 2003, p.140).

2.7 Summary

Part of the professional associations' (such as ALA, IFLA, CILIP and ALISE) role is to evaluate the LIS schools' curriculum content and judge its acceptance, suitability and reliability; ensuring that LIS schools are performing well, meeting the needs of the profession, and identifying areas that needs improvement is part of this. The guidelines, structure or reports they produce should be followed by LIS programmes to develop and change their programmes' offerings. Nevertheless, curriculum revision needs to take place regularly (IFLA 2002 and ALA 2006), to ensure LIS programmes' are updated and are meeting country's needs.

ICT skills were mentioned within professional associations' standards/guidelines, which show their importance. IFLA listed them as "core skills", CILIP defined ICT skills as one of the "core areas" and ALA listed them as basic "technological knowledge".

ALA appeared to be the most concerned with ICT. It has defined the term and has divisions dealing with different aspects of ICT. Moreover, McKinney (2006) indicated that the number of ALA accredited institutions instructing the competency "Technological Knowledge" as 56 (100%) of US LIS programmes.

Extensive evaluation of LIS programmes is important to measure whether standards are being met and to recognise areas of improvement. LIS schools (worldwide), however, lacking professional associations in their areas need to form such associations by following IFLA, ALA or CILIP guidelines/standards as a start. (Khoo, Majid & Chaudhry 2003, p.140).

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2.8 Employers' ICT skills needs

LIS graduates employers' views are usually sought to identify whether employees have met their job requirements and whether there are gaps in their knowledge, skills and attitudes that could be improved by LIS departments (Ocholla 2001, p.144). Employers' perception is also to be taken into account to examine and redesign LIS curriculum emphasising ICT skills (not specified) capabilities (Ur Rehman 2000b, p.15). Employers' perception will help LIS programmes develop their curricula in response to market needs to include new courses and skills that are in demand, for example, according to Aina and Mohi employers looked for professionals with ICT skills as they were increasing the use of ICT in their organisations (Aina & Moahi 1999a, p.5).

The need of ICT skills (including word processing, internet and database searching, emails use for current awareness services or sending online messages) in libraries and institutions employing LIS graduates differs. This depends on the services offered (such as database and online searching, current awareness, and internet browsing) and whether it is a public, academic library or a private information centre. Employment in private organisations often requires having more ICT skills and sometimes specialisation in some database systems (such as the use of specific in-house databases). Employers try to seek graduates that have already gained these ICT skills during their study or if they have had previous experience and have been working while studying. Therefore, LIS programme should obtain employers' opinion, being the consumers of graduates, to know if their expectations are being met. Analysing employers' needs of graduates will help guarantee the shape of the LIS curriculum, changes to be made and whether the graduates are meeting the expectations of their employers (Aina, Moahi 1999a, p.2).

2.8.1 LIS public sector employers (academic/public libraries and LIS schools graduates' employers)

Since the 1980s employers' needs with regard to LIS graduates has been done through the analysis of job advertisements and through employers' surveys. Cote (1989, pp.166-168) analysed 229 job advertisements at the McGill LIS Graduate School, Canada, during a period of one year to identify skills needs of the job market. Her results showed that employers needed librarians to have good computer skills. These skills were not mentioned by the author but were assumed to be basic computer skills such as use of office applications searching databases, library catalogues, CD-ROM, managing automated systems and use of computers for searching and retrieval of information.

In another study, during the 1980s, White and Paris (1985, pp.4-31) requested the directors of libraries, in US and Canada, to relate the curriculum of the accredited MLIS degree programmes to their individual requirements in the employment of junior professionals. They recommended courses (such as advanced reference, general online searching, advanced cataloguing and classification and others) that were important for the employment of professionals in their organisations, to be offered to all students that have joined a master's programme. The directors were asked to determine and rank other options for education and training outside the traditional MLIS one-year degree. The other choices included the development of the content of the curricula and courses offered; the offering of an undergraduate programme; the expansion of the graduate programme's duration to more than a year with offering a specialisation, the inclusion of practice work assignments to be offered with academic credit; movement of courses from the programme and adding them to on the job training; and the elimination of other courses of the curricula. The employers were also asked to rate other choices for continuing education and to relate them to the methods of professional and economic motivation. It was found that not everything could be learned from on-the-job training and continuing education and that this was left for library educators to decide upon. The authors concluded that it is crucial to make an overall curricula strategy that all practitioners and educators will agree upon, although they found it difficult. Even though this study did not present the incorporation of ICT or computer courses, it raised the issues of increasing the content and adjusting the emphasis of the curriculum according to employers' needs. This implies that employers were suggesting that "library education must change as the profession changes" (White & Paris 1985, p.32).

Also during the 1980s librarians in a two-year community college in Texas were surveyed to find out: their characteristics, skills, behaviours and attitudes; and how well they were prepared for employment. Respondents stressed that a librarian must be an effective teacher, motivator of students, establish understanding, teach good library skills, be familiar with computer technology skills, cooperative, and be able to do a variety of duties such as library instruction and online database searching. Furthermore, employers' expectations of librarians were: librarians were trained sufficiently in the areas of librarianship; aware of new technologies and automation of library services as searching databases and using microcomputer; possessed people skills; handled automated technical services; and adopted new technologies as CD-ROM. The college library administrators' opinion were also sought they suggested that library graduates needed to have knowledge of technologies; library automation; online database searching; MARC and online cataloguing experience (Dumont 1989, p.62-69). The LIS emerging market in the 1980s appeared to be looking for librarians who possessed traditional LIS skills in addition to ICT skills.

In 1999, Aina and Moahi (1999a, pp.3-5) surveyed employers of the DLIS at the University of Botswana to determine whether graduates have met their expectations. Twenty four of forty employers completed the questionnaire. Employers were satisfied with the graduates since the traditional librarians' duties were all being taught in the curriculum. It was recommended that the department should extend its curriculum to include a detailed ICT component, thus their graduates can function in organisations other than libraries.

More studies emerged, during the 20th and 21st century as the integration of ICT increased. Cullen (2000) and Moreiro (2001) stressed the need for strengthening the ICT skills element of the LIS curriculum. Nevertheless, if librarians are to occupy this market they need to "be able to offer the range of skills and experience that employers are looking for" (Breen *et al.* 2002, p.128).

Ocholla (2001, pp.143-144) reviewed the curricula of the LIS programme at the University of Zululand, South Africa, and investigated employers' view on graduates, using a follow-up study and newspaper scanning methods and also by analyzing the

strengths and weaknesses of the programme. Graduates were interviewed with their employers to find out whether the knowledge, skills and attitudes achieved through their LIS education were adequate for their job requirements and whether there were gaps in training. Respondents recommended the following ICT related changes: computer literacy to be intensified; online searching and retrieval to be increased; more technology courses to be provided; knowledge of LIS software programmes to be intensified; and intensify ICT and internet coverage. Most of the respondents plan to develop their jobs and to attain further education, experience and exposure. The curriculum was to be revised to include computer-based courses and other LIS modules (Ocholla 2001, pp.146-165).

Moreover, the integration of an ICT courses into the curriculum included more specific ICT skills. For example, Ojedokun and Moahi (2005, p.133) conducted a study on the DLIS at the University of Botswana and other organisations. ICT (including CD-ROM, email, and library management software) was recognised to be affecting their work but in different degrees. Employers were asked to point out the skills required of information professionals. They indicated that information professionals should have information retrieval and management skills; word processing and desktop publishing skills; information, communication and presentation skills; and webpage design and maintenance skills to work efficiently in the information job market (Ojedokun & Moahi 2005, pp. 136-138).

There is, therefore, an identified need to incorporate ICT into the LIS curriculum of undeveloped countries. Lutwama and Kigongo-Bukenya (2004, pp.103-106) examined the East African School of Library and Information Science (EASLIS) in Uganda trying to find out where graduates work; what they do; their ICT training; employers' expectations of graduates' training and education in the field; and where the curriculum needs to be revised. Findings of the study revealed that most of the EASLIS graduates were employed in traditional libraries and only 5% were employed in private organisations. Employers revealed that graduates lacked practical competencies and skills (including management skills, database searching, online retrieval skills, and computing skills). Graduates, nevertheless, needed more training after graduation. The programme lacked ICT facilities and as a result students had inadequate practical experience. The authors recommended, along with other

recommendations, that the use of ICT needs to be improved, applied, and more practised in the curriculum.

The above literature indicated the need of ICT skills from the public sector point of views. The ICT skills needed by employers ranged from computer skills; knowledge of technologies; library automation; online database searching; MARC and online cataloguing experience; information retrieval and management skills; word processing and desktop publishing skills; information; and webpage design and maintenance skills. The studies recommended adjusting the LIS curriculum according to the needs of employers. The private sector employers will be discussed in the next subsection to incorporate its ICT skills needs.

2.8.2 LIS Private Sectors (industry, commercial and special libraries)

LIS schools need to realise the market needs of different sectors, private and public, and include them in their curriculum. Thus, they should provide training during LIS education for these skills which will help meet employers' needs. Blankson-Hemans and Hibberd (2004, pp.270-279) surveyed the commercial sector skills, to seek how well LIS courses match the requirements of employers. They found that the skills needed by practitioners were: use of office applications (Word and Excel); online and Web searching skills; reference interview skills; and selection and evaluation of online services. They recommended that academics should change LIS courses to consider new competencies (such as research skills, communication skills, interpersonal skills, time management, marketing, public relations, and computer skills) needed by the information industry. It was suggested that if LIS students are to work in industry, they should take instruction in certain courses (such as small business management and management behaviour skills). It was also recommended that there was a need for a change in the attitude of information professionals to have an understanding of business issues.

Similarly, Younger (2005, pp.42-49) examined one thousand advertisements for LIS posts in the UK published between April 2004 and March 2005, to establish which skills are mostly required by LIS employers and if there were differences between sectors. Younger found that ICT skills (ranging from Microsoft office applications to a general level of ICT literacy) were the most required skills by employers. It was

also the most important skill at the level of a library assistant, library graduate trainee. In addition, ICT skills were the most important skills in the commercial sector, especially Law. ICT skills in this study seemed to be in very "high demand".

However, LIS graduates were not preferred by the private sector. Breen et al. (2002) investigated the private sector, in Ireland, to evaluate business needs of the LIS ICT skills. A number of 20 companies that dealt with the "subject organisation of information in an online environment" (Breen *et al.* 2002, p.129) were surveyed, only seven responded. Results indicated that none of the companies listed LIS training skills to be useful to their business. There was no interest in the employment of librarians within "subject organisation of information in an online environment". That is why graduates needed to promote their skills more effectively to employers and to prove their experience in reference query, use of introductory HTML, and databases use added to the employer's required skills. In addition, it was suggested that while LIS graduates were equipped with the necessary LIS skills, the view of "the librarian" hindered LIS graduates from entering the business sector and that managers, of surveyed companies, did not think of LIS graduates when they employed information specialists (Breen *et al.* 2002, pp.130-133). Cullen (2000, p.279) also found that out of 123 LIS positions, advertised in three Irish newspapers, only three were posted for business/private library positions where as 89 positions were for jobs in the academic and public library sector.

Stephens and Hamblin (2006, pp.220-226) surveyed four UK specialist employment agencies in 2005 using semi-structured interview schedules. Their aim was to recognise the diverse employability areas that recruiters needed for 11 Library and Information Management sectors (LIM). Visits were made to LIM academic departments to see whether the results suited the academic staff views' on skills gaps in their teaching resources. Findings showed that the LIM sectors placed different importance on the essential employability skills needed. This included core skills (the organisation of information, collection management and enquiry work) that appeared to be in much demand. Other skills required by employers were "customer care and awareness of technology and how that impacts on information to users" (Stephens & Hamblin 2006, p.222). The agencies stressed that although ICT skills (not specified) were at hand, there was a lack of application in the areas of analysis, records management, information management, internet content and knowledge management.

The skills required to meet employment developments in the next two years were recognised by the agencies to be: online skills; basic skills; research skills; awareness of legislation; web development; records management; application of information technologies within an organisation; and awareness of the library and information sector as a whole (Stephens & Hamblin 2006, pp.221-224). Finally, the LIM departments surveyed expressed their wish to "address gaps in provision of employability skills within curricula" (Stephens & Hamblin 2006, p.218).

The private sector, unlike the public, requires ICT skills in addition to other employability skills such as research skills, communication skills, interpersonal skills, time management, marketing, public relations, research skills; and awareness of legislation. However, some private sector employers had no interest in the employment of "librarians". The next subsection will review studies of LIS employers' ICT skills needs in Kuwait.

2.8.3 Employers' ICT skills needs in Kuwait

Little research has been conducted on the needs of the job market for librarians in Kuwait (Lesher & Abdel-Motey 2002, p.5) and little research has been done on the employers' needs of LIS graduates' ICT skills in Kuwait.

Al-Ansari and Conaway (1996, p.38) indicated that a number of libraries (special, school, and public) and information centres have been established in Kuwait. Accordingly the use and integration of ICT (CD-ROMS, databases, internet, and online information retrieval) has also increased. This has generated the need for skilled and trained information professionals in the use and management of these new technologies.

Lesher and Abdel-Motey (2002, pp.6-14) surveyed directors of five institutes, that employed the majority of librarians in Kuwait. Employers were asked to rank specialisation areas that were desired in new graduates. They ranked computer application in libraries as the first, indicating that LIS programmes need to stress ICT application in its courses. The other areas of specialisation included cataloguing and classification, information services, information resources and building collections and library management. Employers were also asked to list 30 competencies

promoted by the DLIS, CBE. Results indicated that 11 competencies were rated as "most important"; the competencies listed in relation to ICT were selected such as (Lesher & Abdel-Motey 2002, p.13):

- Provide information and resources and supervise its use.
- Differentiate among, evaluate and use information sources.
- Operate equipment and tools and train others in their use.
- Utilize advanced technologies and automated systems in the workplace.

In addition employers were asked to point out other competencies that graduates should have that were not listed within the 30 competencies. Technology competencies (including computer use, internet searching, networking abilities, MARC record skills, new equipment use) were cited by more than one employer. It was suggested that these skills should be incorporated more fully into the DLIS courses to prepare librarians (Lesher & Abdel-Motey 2002, p.15).

Anwar and Alansari (2002, pp. 236-239) conducted a study on the GCC countries, in which they analysed the perceptions of public libraries employers about skills development in their staff. They found that of the ICT skills (automated systems, electronic resources, networking and multimedia applications) the searching of electronic databases was rated first and internet applications was rated as second among other fourteen ICT skills (such as planning of automated systems, searching online databases, Web page searching, internet applications, local area networking and others) of the Continuing Professional Development (CPD) activities required by employers. One of their recommendations was that the Council of academic libraries should implement a staff CPD programme, by appointing the LIS programmes in the region to develop regular activities for LIS professionals in the region.

Abdel-Motey (Abdel-Motey 2003, pp. 56-64) surveyed the current and future needs of LIS graduates to work in libraries in Kuwait (including school, public, academic, national, and special). He concluded that the special libraries sector, including the private sector, was the mostly in need of research to know its employment requirements. There was a need, up to the year 2007, for more than two hundred and fifty of Bachelor of Library and Information Science (BLIS) and eighteen of MLIS graduates for the schools and public libraries sector. The academic sector was in need for twenty five BLIS and five MLIS graduates. The national libraries needed forty

seven BLIS and sixteen MLIS holders. It was recommended that the job market was mostly in need of BLIS holders who have ICT applications and English language proficiency. The English language was also recommended as a course in the LIS curriculum.

Another study was carried out by Marouf and Ur Rehman at the MLIS programme (2007, p.198). They interviewed thirty two employers, professionals, academics and students. Their findings suggested that ICT skills (document management, database management, content management, system architecture, intranet design and management, speaking the language of ICT professionals, web applications, developing electronic resources and e-publishing) were the most emphasised skills. The skills were also recognised as the skills that mostly inhibited employment opportunities. In addition, the research suggested strategies of employment opportunities for the MLIS holders in the private sector. The authors recommended a redesign of the MLIS programme in order to add ICT and other specialisations to the curriculum.

There is a need in Kuwait for ICT skilled and trained LIS graduates. To achieve this it was recommended to incorporate ICT more fully into the DLIS courses to prepare librarians for the Kuwaiti job market.

2.9 Summary

The public sector (including schools, academic departments, public and academic libraries and public funded institutions) is known to be the first employer of LIS graduates, for example, Lutwama and Kigongo-Bukenya (2004) found out that most of the EASLIS graduates were employed in traditional libraries. LIS employers in the public sector started to employ LIS graduates with ICT skills since the 1980s, when they realised the importance of ICT. Employers, nevertheless, in the public sector required graduates with traditional library skills, in addition to ICT skills. Recently studies have confirmed that ICT skills are required (Ojedokum & Mohi 2005) and are a necessary qualification for employment in all sectors. It was found that LIS graduates in the public sector lacked ICT skills (Dalton, Mynott & Shoolbred 2000,

p.274). Therefore LIS graduates needed on the job training and ICT courses needed to be included into the LIS curriculum (Ocholla 2001).

On the other hand the private sector (including commercial, industry, special libraries and any other nongovernmental funded organization) views LIS graduates as having the traditional role of a librarian and still not being able to function in business or in other non-LIS organisations (Breen *et al.* 2002 and Cullen 2000). Employers realised that there was a need to emphasis ICT skills (ranging from Microsoft office applications to a general level of ICT literacy) during LIS education (Younger 2005) and that LIS courses should change to consider new skills (research skills, business sense, communication skills, interpersonal skills, marketing and management skills, public relations and computer skills general knowledge and current awareness) needed by the private sector (Blankson-Hemans & Hibberd 2004, p.279). However, LIS graduates with ICT skills, in Asia, have had better job opportunities in the private sector due to high salaries and better employment conditions (Miwa 2006, p.23).

Although employers in the private sector stressed the need of ICT skills they wanted more specialisation (such as having online and Web searching skills, use of HTML, online databases searching skills; web development; and application of IT within an organisation) in its use and application. Nevertheless, Smith and Warner (1989, p.42) suggested that library schools can simply teach basic skills (such as the fundamentals of librarianship: philosophy of librarianship, selection and acquisition of materials, referencing, cataloguing, administration, and library automation) and not specialized training (such as problem solving abilities, managerial abilities, speaking and writing abilities, and planning, analysing, and budgeting abilities) needed by employers to their students.

While training activities had made professionals move or change sectors, it was found that the lack of professional training during employment narrowed the opportunity of career development. It was also found that training within sectors focused on the specific skills required by that sector, as a result little funding and time was set by employers for the training of other LIS skills (Dalton, Mynott & Shoolbred 2000, p.275).

Employers expected graduates to have qualifications and skills (such as database management, word processing, computer skills, and internet searching) in addition to a degree or previous training. Some also required graduates to have at least a year of work experience (Moreiro 2001, p.32). Graduates, nevertheless, needed more training after graduation. They were required to take continuing education training courses and employers encouraged staff to pursue these training strategies (Lutwama & Kigongo-Bukenya 2004 and White & Paris 1985). It was also recommended to have on the job training (White & Paris 1985), in order to gain the needed skills.

In summary ICT skills were seen to be common to most sectors (Dalton *et al.* 1999, p.59). Employers' opinions were investigated to obtain their expectations of graduates' skills, redesign the related courses, and shape the overall curriculum strategy. Although ICT skills are taught and learned during LIS schools, these skills needs to be improved, practised and sometimes learned again during employment.

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2.10 Challenges and barriers

Although LIS programmes are trying to change their curriculum and to integrate new ICT use and skills through their courses, these programmes are facing challenges and barriers that may affect adoption and change. The following will review some of these challenges and barriers.

2.10.1 LIS curricula improvement

"One of the greatest challenges for educators is to ensure that the content of LIS courses is regularly evaluated, revised and updated to respond to the rapidly changing world in which we live and work" (Hallam 2006, p.49). Thus, LIS programmes need to change in order to improve their curriculum.

Ocholla (2000, pp.37-44) surveyed the curricula, programmes, accreditation, resources, fieldwork, continuing education, trainees and trainers in LIS departments in Africa through literature reviews. He describes the LIS curriculum as a "blueprint that provides fundamental guidelines for a LIS Department on: what is studied; why; when; where and how it is to be studied; who should study and how the course of study is to be evaluated and trainees assessed" (Ocholla 2000, p.37). It is known that many countries plan to develop their LIS education programmes but they face barriers such as inadequate resources and inexperienced trainers. This in turn affects the adoption of a new curriculum as in Francophone and Lusophone Africa. Ocholla concludes the study by presenting problems including: institutions studied reported to have inadequate funds; inability to attract appropriate staff; insufficient tools and lack of computer labs; the increasing number of student and technological needs are not always balanced with technology; and lack of information materials and human resources. Another problem that seemed to be universal was the need to employ highly professional academics and researchers with good technology skills. These issues and trends represented "a challenge for viability that involves attracting more students, re-organising the curriculum by introducing new content and programmes and introducing and exploiting new technology" (Ocholla 2000, p.46).

Rath (2006, p.39) also listed challenges for LIS education that are needed to sustain quality among them, one of which was the need for a basic curriculum. The adoption of an up to date curriculum was needed comprising of professional knowledge, skills (managerial, technological and communication), and specialisations that in turn allows the learners to compete at local and international level.

2.10.2 Training and Motivation

Training during LIS schooling is very essential. Students' ICT training should make them professional, enhance their ICT skills and improve their handling of users' enquiries. Students need to become familiar with the tools and equipment (such as computers, software and hardware, databases and others) they will be using and any ICT related skill. Thus they become professionals during their career partly through being able to perform and give support in terms of ICT. Further graduates' training was suggested to help make them capable of adjusting to rapid change (Aina & Moahi 1999b, p.229).

Polk and Kahler (1989, pp.56-57) surveyed school librarians, in Texas, and concluded that academic training was rigorous in areas of collection development, cataloguing and technical services, but it was weak in the areas of public relations, practical management, and technology-related skills. It was suggested that one way to addresses the weakness of automation technology instruction was that field trips could be made to schools that had automated systems to gain experience.

However, staff motivation was found to be low in public, academic, school, and special libraries in Kuwait and training programs were insufficient in number and content (Al-Hassan & Meadows 1994, p.21). Al-Anzi (1995, p.245), in his doctoral dissertation, found that undergraduates in Kuwait had insufficient ICT (including the use of computer systems such as PC and workstations, software such as word-processing and database design, and library computer-based systems) education, and this resulted from their lack of ICT education in their early schooling. Al-Anzi recommended that the DLIS, CBE, should develop and enhance ICT courses in their curriculum. In addition, Al-Ansari and Conaway (1996, pp.33-35) reported a number of difficulties associated with human resources in the LIS profession in Kuwait, a shortage of training programmes were among them. Most of the librarians in Kuwait,

during the time of the study, consisted of paraprofessionals 65.3%, clerical 19.6% having educational qualifications below international standards, and professionals representing 15.1% only. The experience and skills of information employees in Kuwait, at that time, did not meet the future requirements of Kuwait. Hence, the following was recommended along with other recommendations: identifying training needs in Kuwaiti libraries and information centres and conducting intensive staff training programmes whether local or abroad.

Al-Qallaf and Al-Azmi (2002, p.303) surveyed respondents' training and development activities in Kuwaiti public libraries. They reported that only 16 (24.2%) out of 66 library staff used a computer. The respondents were also asked about current training and development activities in ICT resources. All of the participating libraries used informal training, depended on hands-on-experience and staff orientation. Only five (62.5%) libraries used formal courses offered by public or private institutions. The authors found that it was the libraries' responsibility to provide computer literacy training and to teach the use of electronic resources. Employers seemed to be practising individual training since they were not getting enough training during their education or employment.

Mambo (2000, pp.387-388) discussed the training of library and information professionals in Africa. He argued that training provided in LIS schools must be appropriate and useful to allow trainees to make use of it in their real working settings. He stressed that the ability of library schools in Africa to provide adequate and useful training within existing resources and conditions, was rated as being poor. Training of LIS professionals in developed countries appeared to be important due to the good training structure that was followed in these countries. Such training made African students gain experience from developed countries' libraries. However due to the low level of development of libraries in most African countries, not all of this training and skills gained could be practiced by these libraries. It was concluded that there was a need to strengthen the existing LIS schools in Africa. Accordingly, curriculum development should introduce to students new management skills and training on the new aspects of information collection, processing and dissemination using new information technologies. Further, strategic training (a strategy based on concrete information from different LIS training professionals in Africa) must be

adopted by LIS schools in Africa to enable the development of adequate and proper training (Mambo 2000, p.391).

Additionally, Library schools do not receive much attention, if any, from their responsible authorities (Mahmood 2003, p.108). This does not only affect the book budget but it also affects the training library schools offer to librarians. In order to develop graduate ICT skills (such as word processing, internet, database, and CD-ROMs searching) more comprehensive training needs to be offered. It is through LIS education and through training programmes that skills (such as project management, research skills, critical skills, problem solving, communication skills, analysis, financial skills, presentation skills and others.) are improved (Missingham 2006, p.265).

Smith and Hepworth in UK, (2005, pp.46-47) conducted a study on thirty-six school students to find out their understanding of information literacy and information skills, barriers they had and factors that motivated them. Their findings indicated that although many students were familiar with different information skills, their skills were not developed so they could complete the research process. The students thought that they were poorly trained to search for information on the internet and in a library. The students needed more help and training to complete the research process. It was suggested that training should be included into a research topic and not done separately. The training should give feed back to students and start from primary school and continue at secondary education. However, the students felt motivated to work in groups and in a comfortable and relaxing environment such as at after-school clubs.

LIS students need to be able to learn and adopt new information technologies as they appear. The lack of training and motivation in the previous literature was seen as a barrier preventing students from developing their ICT skills.

2.10.3 Academic Staff and Students' ICT skills

LIS programmes witnessed scarcity of teaching staff with ICT skills due to finding "better financial rewards elsewhere", as a result LIS schools lacked academics that can support and develop ICT courses or module (Minishi-Majanjaa 2007, p.5).

Abdullahi and Kajberg (2004, p.354) recommended that LIS schools should employ knowledgeable teaching staff at an international level for LIS education. Hence the teaching staff will be able to bring skills to aid curriculum development. It was suggested that teaching staff should keep themselves up to date with LIS development to help provide good levels of teaching and research. They should be responsible for continuing their own education and training. A way to help teaching staff keep up with this is to have regular external evaluations of course content (Ocholla & Bothma 2007, p.75). Rath (2006, p.39) listed some challenges for LIS educators to maintain quality in their programmes such as the use of technology in delivering LIS courses; keeping up with Learning Resources (print, Electronic and Web Based) that complement the curriculum; joining continuing education programmes that develop professional skills; and having systems of continuous evaluation where teaching staff gain feedback from management to help develop their competencies.

Lack of ICT skills was also found when graduates at the University of Zululand were asked about the knowledge and skills they lacked, they listed the following skills relating to ICT among other skills: computer literacy, internet and electronic mail use, computer skills, database management, library computer skills, and use of computers for searching and retrieving information. Nevertheless, ICT skills were identified to be fundamental (Ocholla 2001, pp.153-154).

2.10.4 Impact of Finance

Adequate financial support is needed to maintain standards and quality in delivering LIS education (Rath 2006, p.39). Considering the fact that academic libraries are providers of ICT equipment in the academic domain, Ani, Esin and Edam (2005, p.706) found that the major obstacle that hindered the adoption of ICT in university libraries in Nigeria were inadequate funding.

Additionally, salaries are known to be higher among LIS graduates, recognised for their skills in managing and organising information, but not in libraries (Missingham 2006, p. 265), where LIS graduates are usually employed. Aina and Mohi (1999b, p.228) reported that out of 77 respondents 13 indicated that the profession had a low profile, 24 felt the salary was too low, 23 experienced no professional encouragement and that 14 of them had no excitement towards their jobs. That is why librarians

prefer to work "outside of the traditional profession" where work is connected to information (Genoni & Smith 2005, p.9) and where graduates are working in non-library jobs (Alemna 1999, p.37).

Al-Ansari and Conaway (1996, p.38) recommended that salaries in the LIS profession should be raised to attract people working in the field this includes promotions and bonuses. Similarly, in another study it was revealed that obstacles in the information field in public libraries in Kuwait were due to the lack of staff motivation, budget shortage, and lack of ICT and modern technologies (Abdel-Motey & Al-Ansari 2003, p.34).

2.10.5 ICT Resources and facilities

LIS education is extremely dependent on computer hardware and software, internet connectivity, ICT skilled staff and well equipped laboratories. Regrettably LIS schools' funding does not meet these needs (Ocholla & Bothma 2007, p.71). LIS schools around the world cannot operate without hardware, software and other ICT facilities. Nevertheless, most schools are short of them.

Hakkarainen et al (2000, p.116) revealed that in Finland, an advanced country in terms of ICT use, computers were located in separate laboratories in schools instead of being in the actual classrooms of learning and teaching. Students and teachers had access to ICT applications during ICT courses only. They suggested to have computers in the classroom and to bring its use in different subject domains.

Ur Rehman, Al-Ansari, and Yusuf (2002, pp.11-14) and Ur Rehman and Al-Ansari (2003, pp.173-175) found that six GCC schools were extremely deficient in technological resources (including PCs, local area networks, printing and scanning facilities, audio-visual materials). Most of these schools were deficient in the use of hardware, software, and other technological resources needed for course instruction of LIS. It was recognised that a LIS programme cannot be accomplished without the active and intelligent application of ICT resources. It was also recognised that instruction facilities need to be significantly improved in these schools. Most of the schools also experienced scarcity of monographic and periodical resources. This alone would mean that these schools would fail for an accreditation test. Moreover,

ICT resources were not being well applied to education and one of the schools had no ICT resources at all (Ur Rehman & Al-Ansari 2003, p.177).

Such challenges and barriers are faced by most LIS schools and they need to overcome them. One way to do this is by collaboration between LIS schools in the region as will be examined in the following section.

2.11 Collaboration as a solution

Collaboration between LIS schools (particularly undeveloped and poor countries) can solve a lot of barriers effecting curriculum change, especially in the collaboration of professional academics and researchers to exchange teaching experiences and knowledge. Ocholla and Bothma (2007, p.72) stressed that collaboration could be made between LIS schools locally and internationally in areas of teaching, research, teaching staff exchange, conferences and workshops, curriculum development, publications and others. Additionally, Hallam argued that "LIS educators cannot work in isolation: the LIS profession as a whole must work together collaboratively to ensure it has a bright and relevant future" (Hallam 2006, p.41). In other words collaboration is suggested among the LIS profession, with developed countries, to bring curriculum issues and problems together and to resolve curriculum problems.

Gollop (1999, p.394) pointed out that LIS programmes will bring better results by attracting students and teaching staff to the field with new methods of support. This can be achieved by the collaboration of parties involved such as administrators, educators, and practitioners inside and outside the classroom. These parties will need to communicate more, form working partnerships and support as professional information specialists in the field. This will improve LIS curriculum as professionals will work to better understand and serve a growing multicultural society. To reach such change LIS education's deans, directors and accrediting bodies**,** will need to review the position and future direction of the field.

Hilliger and Roberts (2001, p.15) recognised the importance of integrating ICT skills at Edge Hill College, in England, of HE within an undergraduate marketing programme through collaboration between the Library and Information Services (LIS) and the Business, Management and Leisure programme (BML). It was

recognised that students benefited from this collaboration; it facilitated ICT skills learning; and allowed the students to apply these skills outside the session and practise their skills. It also has developed the teaching staff's awareness in using Educational Resources (ER), teaching and learning skills.

Dalton and Levinson (2000) looked at LIS education worldwide and other concerns related to exchanging and sharing LIS qualifications internationally. Data on LIS courses was collected from countries worldwide with the view of "how data should be maintained nationally and accessed internationally" (Dalton & Levinson 2000, p.2). This would enhance a well structured LIS education. Apart of this was identifying a model of international LIS curriculum, the mapping of skills required by LIS professionals globally, and approving standards for LIS education among countries. They concluded that there appears to be no obvious and straightforward approach of resolving the exchange of qualifications unless more is known about LIS education worldwide. This requires commitment from LIS professional bodies internationally, discussed earlier in section 2.5.5.

Supporting Dalton and Levinson (2000) views of internationalising LIS education, Abdullahi and Kajberg (2004, pp.346-347) stated the importance of collaboration of LIS education between 60 LIS programmes in the U.S., Canada and the European LIS schools to reinforce and develop their curricula and to comprehend the LIS profession. This was pursued by carrying out a number of international meeting, seminars, publications and visits. Teaching staff exchange among these countries was a way of sharing knowledge and developments in the field. They also added that all LIS schools should have an international view for all their students in order to adjust to the changing world. They concluded that most of the surveyed schools are concerned with the internationalisation of LIS education. Finally their recommendations included that standards should be developed to guide LIS schools in the addition of international components for their courses offerings (Abdullahi & Kajberg 2004, p.353).

In this regard, the ACRL has published a joint task force report with the American Association of School Librarians (AASL) on the educational role of libraries. It considers ways of collaboration between librarians and post-secondary education to

the advantage of the areas they serve. The report recommended collaboration to encourage the education of teaching staff in schools, library school faculty and academic librarians to participate with them in collaborative research, publishing and presenting at conferences (Association of College and Research Libraries 2006).

Cooperation and internationalisation among LIS schools worldwide can improve the curricula among participating countries. It will help LIS schools share their knowledge and concerns and help them to have a shared understanding of the profession and will result in suggestions to achieve better LIS education, teaching and research. Incidentally, Ur Rehman, Al-Ansari and Yusuf (2002, p.24) found that the curriculum in six GCC schools was out-of-date. Since it was perceived that these countries share the same culture and educational background and that the LIS programmes in them are identical, it was recommended that collaboration among these countries in framing a structure for their programmes could lead to a better LIS future.

Chaudhry (2006) suggested different ways of collaboration to improve LIS education. He contended that cooperation at the local level is an important movement towards encouraging resource sharing internationally. The need for cooperation between LIS programmes in Southeast Asia (Malaysia, Singapore, Indonesia, Thailand, Laos, Vietnam, Myanmar, and Brunei) has been pointed out by various studies and projects have been carried out to promote cooperation between these countries. Chaudhry also suggested a plan for developing a repository of learning objects, to share and reuse teaching materials. The repository will show different views of instructors in teaching courses, details covered and amount of material covered. It could be used to alert people to new developments and emerging topics. Moreover, it can be searched for additional materials on an area and help to identify experts in it. The author expected that using a repository can help to raise the quality of LIS education. The use of new technologies, as the repository, makes it even more convenient that teaching materials are shared between teaching staff to save time for course development and content making. Teaching staff development in Southeast Asia also identified the use of international forums for improving LIS education. The use of a repository, as suggested by Chaudhry, can improve the quality of teaching and learning among concerned LIS schools. Such technology if adopted can be used among LIS schools

sharing the same curriculum or those that will adopt a new one. In addition, it can be used by library schools that are in need of careful curricula guidance from other schools' academics especially those that are geographically separated.

Another study that emphasises the importance of collaboration to improve the quality of LIS education was conducted in China, including Hong Kong and excluding Taiwan. He and Wang (2006, p.186) analysed the research activity and characteristics in LIS in international LIS periodicals during 1975 to 2004, based on Social Sciences Citation Index, using bibliometric methods. Results indicated that research publication output was at a very low level from 1975 to 1985 and started to grow fast after 1991. It also appeared that the amount and average quality of papers that were from Hong Kong were higher than that from Mainland China. Most of the enhanced quality papers were a result of collaboration from Europe and North America but major collaboration with higher quality was from Oceania and North America. However, non-collaborative papers were of a lesser quality. Citation rate is a feature to measure the impact of research in an area and recognise its research quality. China as a developing country needs to raise its research level through various types of collaborations to reduce the gap of its LIS research production compared with developed countries (He & Wang 2006, p.190). As suggested in this study, research can be achieved through collaboration. Academics not being able to publish can accomplish this by collaborating with peers. Research production is a means to measure the quality of LIS education and teaching.

2.12 Summary

ICT adoption is faced with challenges and barriers these include:

1. LIS curricula improvement
2. Lack of training and motivation
3. Lack of ICT skills among teaching staff and students
4. Lack of finance
5. Lack of hardware, software, and other ICT facilities

Challenges and barriers facing LIS schools have led to a call for collaboration as a solution among LIS schools to develop and understand the curriculum. Ways of collaborating have included meetings, exchange of views and teaching staff

(Abdullahi & Kajberg 2004), cooperating with other departments to improve the quality of teaching and research (Dalton & Levinson 2000), and sharing knowledge through the use of technologies (Chaudhry 2006).

Collaboration was emphasised as a means to solve issues and problems LIS schools share. Collaboration of representatives, educators, practitioners and accrediting bodies in LIS will aid the future development of their programmes.

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2.13 Concluding remarks

The review of related literature has established the idea that ICT skills and knowledge are keys to the training and education of LIS professionals. This has been emphasised by LIS programmes worldwide. Thus, there was a change in their titles, courses and ICT skills were included into almost all courses of the LIS curriculum. Nevertheless, LIS schools have faced challenges and barriers that have prevented them from ICT integration.

According to the literature reviewed (Massey-Burzio 1991, Ur Rehman 2000b, Al-Qallaf & Al-Azmi 2002, Beynon-Davies 2002, Blankson-Hemans and Hibberd 2004, Abu Bakar 2005, Association of College and Research Libraries 2006, Rath 2006, Kavulya 2007, Hanson-Baldauf and Hughes-Hassell 2009) ICT skills included:

- use of office applications (Word, Excel, and others);
- databases, library catalogues, CD-ROM, online and internet searching;
- maintaining of in-house databases;
- managing automated systems;
- designing and constructing homepages;
- use of computers for searching and retrieval of information.

The need for ICT skills has also been emphasised by professional associations and their divisions/sections through providing guidelines/standards. These professional associations have specified general transferable skills that LIS programmes should also deliver. For example, IFLA listed them as: communication skills, teamwork, time and task management skills, and analytical and problem-solving skills. CILIP listed the skills such as: human resource management, training and development, financial and budgetary management, statistical analysis, research methods, project management, and language skills (Khoo, Majid & Chaudhry 2003, p.136).

Employers also stated their needs of LIS graduates ICT skills to response to the needs of the job market. It is apparent from the literature review that there is a gap that LIS graduates need to fulfil. LIS graduates should have certain ICT skills that employers demand and they should prove that they are able to respond to the needs of the job market (Breen *et al*. 2002, p.133).

The purpose of the thesis will be to see to what extent this is the case in Kuwait in terms of what is currently offered through LIS education, particularly in ICT skills, the role of consulting professional associations standards/guidelines and the needs of employers. It will also investigate what would facilitate or inhibit change and adoption, if change is necessary.

The literature review has shown that there has been little research on the topic in the area and in Kuwait in particular. ICT skills application and factors affecting it (such as curricula revision, funding, lack of student training and motivation, lack of teaching staff skills and lack of ICT facilities) were not treated as a topic pertaining to Kuwait and there was no literature as such found. Thus no empirical, and recent, study on this topic has been done. The literature review, nevertheless gives us the grounds to develop the research method chapter. Before this we need a snapshot on education in Kuwait, the levels, system, Higher Education, the LIS programmes in Kuwait and ICT integration into the Kuwait educational system. This will be illustrated in the next chapter.

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Chapter Three: Research Background

3.1 Introduction

This chapter presents background information related to the topic of this research. A brief introduction to some features of Kuwait is set such as: geography, language, demography, economy, and religion. Then a discussion on the education system, levels, and Higher education in Kuwait are presented with emphasis on the LIS programmes and the implementation of ICT into the educational system. The chapter is concluded with the use of ICT at the DLIS and the impact of ICT on students.

3.2 Geography of Kuwait

Kuwait is located in south-western Asia in the Middle East. It heads the Persian Gulf located on its east, it is between Iraq to its north and west, and Saudi Arabia to its south and west. The capital of Kuwait is Kuwait city (Figure 3.1). It occupies a small land area of 17,818 sq km. Kuwait has a dry desert; its climate is intensely hot in summer and cool in its short winter (Central Intelligence Agency 2009).

Figure 3.1 Map of Kuwait (Lonely Planet 2009)

3.3 Language and religion

Arabic is the official language spoken in Kuwait. English is widely spoken and taught at schools as the second language. It is broadly used in jobs related to industry and commerce as well as at the private sector organisations. Islam is the official religion of Kuwait.

3.4 Population

As of 2009, the population of Kuwait was estimated to be 3,441,813 (1,087,552 Kuwaiti) of which 2,354,261 were non-nationals. Gender wise Kuwaiti females (%51) surpass male (%49) (Public authority for civil information 2008).

The country has the highest literacy rates in the Arab region, listed as the top Arab country, as of 2007, for its literacy rate (Table 3.1). 98% of its youth and 95% of its population are literate (Figure 3.2); 94% are male and 91% are female (Central Intelligence Agency 2009).

Table 3.1 Adult literacy rate in the Arab States
(United Nation Educational, Scientific and Cultural Organisation 2009)

	Adult literacy rate (%). Total - 2007
Kuwait	94.5
Palestinian	93.8
Qatar	93.1
Lebanon	89.6
Bahrain	88.8 (**)
Libyan Arab Jamahiriya	86.8 (**)
Saudi Arabia	85.0 (**)
Oman	84.4 (**)
Syrian Arab Republic	83.1 (**)
Tunisia	77.7 (**)
Algeria	75.4 (**)
Yemen	58.9 (**)
Mauritania	55.8 (**)
Morocco	55.6 (**)
Djibouti	...
Egypt	...
Iraq	...
Jordan	...
Sudan	...
United Arab Emirates	...

... Data not available
** UIS estimation

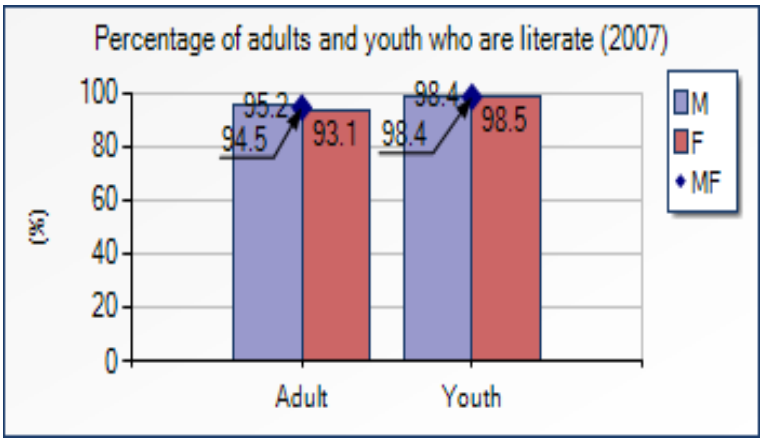

Figure 3.2 Literate adults and youth in Kuwait (United Nations Economic and Social Commission for Western Asia 2009)

3.5 Economy

Kuwait has a reasonably rich-open economy with reserves estimated at 104 billion barrels, 8% of world reserves. Its petroleum accounts for nearly half of Gross Domestic Product (GDP), 95% of export revenues and 80% of government income. Due to its high oil prices, the Kuwaiti economy has placed its growth during the last several years and has witnessed a surplus in its budget. However, the economy was hit by the global credit crunch due to the dropdown of oil prices and was expected to witness slower economic growth in 2009 (Central Intelligence Agency 2009), compared to earlier years. Nevertheless, because of the country's large oil reserves and foreign currency the government's expenditure will continue to expand (Mostafa 2009).

3.6 Education

Education is viewed as the main tool for promoting high performance in society at the organisational, educational, financial, and social levels. The general aim of education in the State of Kuwait is to make Kuwaiti citizens active and dependable members of the Kuwaiti society:

> Kuwait's education improvement plan stresses the functions of its educational institutions in developing and training its citizens to be part of its experienced human resources. The role of education is to develop the character of all its citizens, to prepare them to meet changes in the country locally and internationally, to provide expertises, to train Kuwaitis to meet technological developments, and to prepare its students for practical future life (International Bureau of Education - United Nations Educational, Scientific and Cultural Organisation 2003).

The Constitution of Kuwait, 1962 Article 40, states that: "Education is a right for all citizens to be provided by the State in accordance with the law and in keeping with the general system and ethics. Education is compulsory and free of charge in its primary stages, according to the law" (Tschentscher 2004).

Kuwait offers free education from KG to university level. Kuwaiti education was made compulsory in 1965. It is the State's responsibility to offer school buildings, teaching staff and all schooling essentials as books uniforms, meals, transportation and others, to assure the success of its compulsory education. Compulsory education ends at the age of 16, if it is not completed at the intermediate level (Nashif 1985).

Education in Kuwait started in Quran schools with basic literacy training of religious learning and teaching. Rich Kuwaitis sent their sons abroad for additional education (Library of Congress Country Studies 1993). More concerned Kuwaiti merchants gathered funds and opened the first boys' private school the Mubarakiyah School, in 1912, when Kuwait entered a new period of its education. The school was the first in the country having an organised curriculum, teaching Arabic, religion, history, English and maths. The Ahmadiyah School, 1921, followed the same curriculum of Mubarakiyah School excluding the teaching of a daily English language lesson. The first formal girls school opened in 1938 (Nashif 1985).

The structured education system in Kuwait started in 1936, when a Council of Education was made with 600 students. During this period Kuwait had only primary education, four schools for boys and one for girls and parents paid for the education of their children. The government soon supervised the education system and in 1945 Kuwait had 12 schools with 3635 students. The first secondary school for boys was built in 1953 (Ministry of Education 2006a).

In 1956, the government adopted an educational plan that imparted formal education into four stages: KG, two academic years; Primary four academic years; Intermediate, four academic years; and Secondary, four academic years (Kuwait Information Office 2006).

Between the periods of 1957 to 1975 a number of secondary technical schools were established, unfortunately enrolment to these schools failed. The Institute of Religious Studies and the Teacher Training College offered secondary education which started in 1976. More Kuwaiti students were attracted to these institutes. During the same period 138 Adult Education centres were founded (Nashif 1985).

With students representing one fifth of the country's population, the Ministry of Education, 2002, started a 25-year plan. It was called "Education Net" it aimed to transform the Kuwaiti educational system by connecting all public schools and libraries to a single network aiming at increasing the use of computers in 620 public schools (United Nations Economic and Social Commission for Western Asia 2006).

Based on meetings between the UNESCO's International Bureau of Education (IBE) and the Kuwaiti Ministry of Education (ME), the IBE-UNESCO (International Bureau of Education- United Nation Educational, Scientific and Cultural Organisation) issued recommendations to the Kuwaiti ME for the improvement and implementation of all levels of education in Kuwait. The new educational system model included five years in primary, four years in intermediate, and three in secondary, 5-4-3 which means a reduction of one year of the upper secondary stage and the extension of compulsory education from eight to nine years of school education. In 2005 the new strategy plan of education was introduced to improve the educational status in Kuwait. The plan included curriculum evaluation and certification, class and school management, teacher education, and some of the following issues, but not limited to (International Bureau of Education - United Nations Educational, Scientific and Cultural Organisation 2004):

- Adding three new subjects to primary education; National Education, ICT and practical skills.
- Setting up equipped labs at all school levels and providing classes with data projectors, computers, VCR and an internet facility for every school.
- Promoting students towards continuing education at higher education institutes, to supply the needs in the labour market.
- Reducing the number of students in classes from 35 students to 25 students.

- Contributing to different research in economic, social and cultural development (Ministry of Education 2006b).
- All teachers are to hold an International Computer Driving License[4] (ICDL), by 2007-2008.

3.6.1 The educational levels in Kuwait

Education is divided into four levels in Kuwait including KG, Primary, Intermediate and Secondary. Kuwaiti secondary schools graduates' continue their studies at several two years technical colleges at the Public Authority for Applied Education and Training (PAAET) or they can obtain their BA from PAAET's, four years colleges, and Kuwait University. Otherwise a lot of students pursue their studies abroad to gain other degrees.

3.6.2 Ministry of Education

The Ministry of Education was established in 1962. It is one of the largest ministries with about 50,000 employees. The Ministry aims at updating and developing educational and teaching methods to ensure a good standard of education for all Kuwaiti citizens (Kuwait Information Office 2006). All schools and institutes, public and private, are subject to regulations formulated by the Ministry of Education, managing school education until the last year of secondary education.

ME attempt continuously to grow the perception and function of education to face the rapidly changing technological and scientific developments. It strives to pursue the following objectives (International Bureau of Education - United Nations Educational, Scientific and Cultural Organisation 2003):

1. The development of curriculum and teaching methods.
2. The improvement of female education.
3. The encouragement of literacy and special programmes for gifted and special needs students.
4. The measurement and evaluation of student's learning and education.

[4] ICDL covers seven components as specified in the ICDL syllabus; basic concepts of information technology, using the computer and managing files, word processing, spreadsheets, database, presentation, information and communication.

5. The instruction of sciences and ICT in all of its institutions.
6. The improvement of school libraries.

3.6.3 The education system in Kuwait

The education system in Kuwait can be divided into three groups: public, private and qualitative. The Ministry of Education, ME, manages all three groups of schools in Kuwait.

3.6.3.1 Public Education

Public schools follow the ME's curricula in teaching and structuring in schools. As per the data of academic year 2005-2006, there were 176 KG schools, 212 primary schools, 164 intermediate schools and 116 secondary schools in Kuwait. Public schools in Kuwait are restricted to Kuwaitis, non Kuwaiti children of teachers working for the ME and the children of emigrants who obtained residence prior to 1960. All other emigrants and non-Kuwaiti children must be educated in private schools (Ministry of Education 2006a).

3.6.3.2 Private education

Private education began in the country to cater for the education of the children of working foreigners coming with their families. The first private school in Kuwait was the English Private School established in 1953. In 1959 the first private schools regulation was announced and in 1967 the ME declared the Private Educational System in Kuwait. The following institutions are private education schools: Arabic private schools, foreign private schools, British, American, Indian, cultural institutes (specialising in training, professional and occupational studies) and other nationalities schools (Ministry of Education: Private Education Department 2006).

Arabic private schools are governmentally supported and are run according to the Kuwaiti Educational system requirements. Foreign schools follow their home country curricula. These schools are supervised by Private Education Department (PED) of the ME. The PED manages private schools by administering the staff and the schools as whole. The ME has made it compulsory for these schools to provide courses in Arabic language and to integrate Kuwaiti cultural studies into their curriculum such as Islamic religion, history, and geography (Kuwait Information Office 2006).

Before the Iraqi invasion, in 1990, there were only 15 non-Arabic schools in Kuwait. Western nationals have increased in Kuwait since liberation, as a result western education increased more than three-fold in the country. In 2005, there were 158 private schools in Kuwait (Ministry of Education: Private Education Department 2006).

It was recognised that there was a noticeable preference among Kuwaitis towards Western education for the following reasons (Ministry of Education: Private Education Department 2006):

1. The unsatisfactory level of public education in Kuwait.
2. The recognition of the importance of English language education as a preparation for further education abroad and life generally.
3. The advanced curriculum of the non-Arabic foreign schools in Kuwait.

Even though, the fees of these schools are relatively high, the American and British curriculum schools are increasing. In 2001 the number of Kuwaiti students attending private schools increased from 9% to 10.5%, in 2002 (Ministry of Education: Private Education Department 2006).

3.6.3.3 Qualitative education

Qualitative education in Kuwait can be divided into: Religious education, Special education, Adult education and professional education.

3.6.4 Higher Education

Higher education includes university education and post-secondary education and training. There are two main public higher education institutions in Kuwait: the Kuwait University (KU); and the Public Authority for Applied Education and Training (PAAET). There are also some private post-secondary colleges and universities that are approved by the Kuwait Ministry of Higher Education (MHE) such as:

- Gulf University for Sciences and Technology (GUST)
- Australian College of Kuwait (ACK)
- American University of Kuwait (AUK)

- Gulf American College (GAC)
- Kuwait-Maastricht Business School (KMBS)
- Box-Hill College Kuwait (BHCK)

3.6.4.1 The Ministry of Higher Education

MHE was established in 1988, in accordance with the Amiri decree. It aims to provide education after secondary school. It takes care of all Higher Education institutions' issues, applied studies, and scientific research carried out by the faculties and institutes. It also directs the plans and curricula for training and developing manpower. The MHE manages all abroad Studies and Scholarships and has a number of cultural offices in the US, UK, Ireland, France, Russia, Egypt, Saudi Arabia, Australia, and the UAE. These offices direct and guide Kuwaiti students studying in these countries (Ministry of Higher Education 2006).

3.6.4.2 Kuwait University

Kuwait University was established in 1966, with the aims of (Kuwait University: Centre of Information Systems 2006):

1. Developing and maintaining its educational standard through providing the highest level of teaching, encouraging creativity, and progressing knowledge.
2. Visualizing the development of higher education.
3. Ensuring continuous progress of its teaching programmes.
4. Increasing communication with the community through continuing education programmes.
5. Supplying the country with scientifically and practically qualified manpower in various disciplinary branches of learning.

The university's 14 colleges offer 72 programmes in sciences and humanities at the bachelors, master's, and PhD degree levels, in which English is the language of instruction (Al-Kharafi 2003 and Academic Activity Unit: College of Education 2003).

University acceptance depends on secondary school scores or its equivalents. Kuwait University's admission policy for emigrants is that it offers twenty places for students

whose parents are employed at KU. Another 50 places are offered as scholarships through the MHE. Kuwait University is open to expatriate students, provided their grades meet the requirements for admission (Kuwait University: Deanship for Admission and Registration 2006).

3.6.4.3 Public Authority for Applied Education and Training

The Public Authority for Applied Education and Training (PAAET) was established in 1982, as an independent body that reports to the ME acting as the only central training institution in the country. It also leads the national programme of developing skilled manpower to meet the country's needs in human resources. The main objectives of PAAET are (AlAli 1996):

1. To provide different sectors in the country with well-trained graduates to meet any deficiencies in skilled manpower on a national basis.
2. To pay consideration towards women training programmes to encourage their participation in the progress of the country.
3. To reinforce cooperation between Applied Education and Training and market workforce requirements.
4. To give more attention to Applied Education and Training, to develop the aims of such fundamental body.
5. To alter admission requirements, to meet actual requirements of the country.
6. To improve skills of employees working in PAAET and offer scholarships for Kuwaiti staff.

The curriculum PAAET offers aims at training students by providing accredited programmes, qualified teaching staff, developed technology, and incorporated facilities (Al-Kharafi 2003). PAAET has five full-time post-secondary colleges and nine technical training institutes, where students may learn technical and professional subjects including teaching, commercial studies, nursing, and mechanical and electrical trades. These programmes lead to a bachelor (four years) or a diploma (two years) (Al-Mubailesh 2006).

3.6.4.3.1 College of Basic Education

The College of Basic Education (CBE) at PAAET, established in 1986, was formerly called the Teachers' Institute, 1962. CBE offers teacher education programmes in Islamic Education, Arabic Language Science, Mathematics, Art Education, Physical Education and Sport, Library and Information Science, Technology, Music, KG, home Economics, Interior Design, and Electronics (Public Authority for Applied Education and Training 2002).

The CBE'S main objectives are (Public Authority for Applied Education and Training 2002):

1. To train students to teach in the primary and KG schools of the country.
2. To prepare students to meet the requirements of the College's different programmes required by the Ministry of Education.
3. To promote a link between the divisions of the Ministry of Education and the College of Basic Education.

The college operates under the credit hour system, which requires students to successfully complete a number of credits in order to graduate. The normal period of study is four years (Public Authority for Applied Education and Training 2002).

3.6.5 LIS programmes in Kuwait

Library and Information Science (LIS) in Kuwait is taught as a Bachelor four years degree at the Department of Library and Information Science (DLIS), College of Basic Education (CBE) supervised by the Public Authority for Applied Education and Training (PAAET). The program started in 1977 as two years Diploma of LIS study at the same College. It was the required professional qualification to become an assistant librarian in Kuwait (Alqudsi-Ghabra & Al-Ansari 1998, p.145). Then, in 1986, the LIS four years degree became the required degree, the only in the country to date, for librarians and the teaching of librarianship at secondary schools. The programme nevertheless, focuses on library education in delivering the needs of school libraries but not other information sectors in Kuwait (Abdel-Motey 1995, p.354).

The programme unfortunately suffered a number of problems as the result of the Iraqi aggression in Kuwait in 1991. Destruction to the LIS affected all areas and caused loss in (Abdel-Motey & Al-Hmood 1992):

- Human resources: the programme depended on expatriates and during this time the programme did not graduate any of its students. Employed expatriates did not return after the invasion due to new manpower policies.
- Collections and resources: the College lost all of its collections and electronic resources including hardware and software, books, information systems, and rare collections and periodicals.
- Building and documents: the programme's building, offices, data files, were either damaged or destroyed. The library building was also completely destroyed.
- Equipment and furniture: training facilities, ICT laboratory, and all other teaching equipment and furniture were destroyed or stolen.

The Iraqi attack lost Kuwait years of progress and hard work. It affected all types of information and all those who were depending on it. It took years to restructure information access and to reach the level where it used to be. Nevertheless, reconstruction of the department was undertaken. The department reopened in the academic year 1991-1992 (Abdel-Motey & Al-Hmood 1992, pp.445-446). The programme enrols about 700 students yearly and has about 21 teaching staff members (Ur Rehman 2007, p.8).

In 1996 a two year Masters of LIS (MLIS) program started at Kuwait University, College of Graduate Studies, as a result of the extreme need for LIS professionals and information specialists in Kuwait to work in academic, public and special libraries and other information intensive organisations. In addition to, the need for librarians and information centre employees to continue their education and providing LIS Bachelor holders the opportunity to extend their higher education. The MLIS program in Kuwait meets the standards recommended for accreditation by the ALA. It has been employed to meet the needs of the country and to offer a model of continuing LIS education in the region (Alqudsi-Ghabra & Al-Ansari 1998, pp.145-151).

3.6.6 Application of ICT into the educational system of Kuwait

In order to deal with the changes of the new era, the ME has introduced ICT as an experimental school subject in some of the Kuwaiti schools. It was then extended from KG to Secondary, except for primary (Ministry of Education 2001, p.84). It aimed at increasing the student's knowledge and understanding the importance of technology in the development of human life and in improving student's skills (Ministry of Education 2001, p.39).

Teachers' ICT skills were then gradually developed by training courses such as Excel and Logo. Schools were then provided with books, labs and Personal Computers (PC) gradually (Ministry of Education 2001, p.49).

By the Academic year 2000-2001 most KG schools had the ICT as a subject. It was also introduced to most of the Intermediate stage schools and students were examined in theory and practise. A Computer Confidence course was also added to the secondary stage (Ministry of Education 2001, pp.84-85).

In addition, an agreement was signed between ME and a computer technology company to implement a joint programme for the development of ICT in Kuwaiti schools. The agreement aimed at the following (Ministry of Education Kuwait National Commission for UNESCO 2004, p.57):

- outline the basics of technical cooperation for the services of the information plans in the ME;
- train students;
- provide technical consultations;
- and develop tools, means, and education in ICT systems for teachers and students.

The Ministry of Education in Kuwait has also implemented a new 25-years ICT plan. The major aim of the plan is to modernize the education system by installing "Education Net". Other aims of the plan, related to public schools and libraries included (United Nations Economic and Social Commission for Western Asia 2006, pp.3-6):

- linking public schools and libraries to one network;
- increasing the use of PCs in the classrooms in public schools;
- achieving a ratio of one PC for every eight students by the academic year 2006-2007.
- ensuring that all Kuwaiti teachers get the ICDL, International Computer Driving License by 2007/08.
- academic institution as KU and PAAET offer ICT as compulsory courses to their students.

3.6.6.1 ICT at the DLIS

The DLIS being the only undergraduate LIS School in Kuwait, is the only school that educates LIS graduates to work as professionals in libraries, information centres, and at the private sector. The DLIS is divided into two cohorts; one for male and the other for females. The two cohorts have separate locations in two suburbs in Kuwait. Each cohort has its own administration and teaching staff, but the two are managed by the same department head. Each cohort has two laboratories. The laboratories are fully equipped with eighteen PC in each, connected with an optical internet network, data projectors, and printers.

The LIS syllabus is divided into 130 units. These are distributed into: 30 General courses, 60 specialised courses and 40 vocational courses. Appendix 6 provides an outline of the DLIS 60 specialisation requirements courses. ICT is taught through one ICT core course and eight electives, from which four courses are chosen. ICT skills during LIS education are practised through these courses and through the last semester of work placement.

The DLIS strives continuously to modify and develop its curriculum, through offering courses that adopt the requirements of the job market and modern information and communication technologies. The department has set a new ICT courses teaching plan to teach ICT skills and computer applications. It also plans to create a College of

libraries, information and computer science, when the department moves to its new location in 2010[5].

3.6.6.2 Impact of ICT on students

Since daily study and work procedures depend a lot on the use of ICT to produce and retrieve information through their use, ICT skills are needed to access, evaluate, communicate information, and to produce documents electronically. A report of the Kuwaiti ME stated that:

> ICT in Education is one of the main objectives of education as set by the government… Schools, universities, cultural institutions, and centres of innovation, science and technology should strive continually to adopt their practices to the possibilities of ICT to improve education for all Kuwaitis (Ministry of Education 2007).

The DLIS can prepare students with the essential ICT skills to function as information professionals serving the Kuwaiti information domain. These skills will help LIS students to improve their access to education, communicate and evaluate knowledge, and produce and organise data electronically. This, eventually, will equip them with the ICT skills needed for employability and life.

3.7 Conclusion

This chapter has provided the background of this research. An overview of the State of Kuwait was set with emphasis on its education and the implication of ICT into the educational system. It revealed that ICT has been implemented at all the educational levels in Kuwait. However, in relation to the section ICT education in Kuwait, (Chapter Two, section 2.2.7), ICT in Kuwaiti education is faced by a scarcity in human resources, formal training, lack of facilities, and lack of English language proficiency. The purpose of the research is to distinguish to what extent this is still the case in Kuwait in terms of what is currently offered through LIS education and the needs of the job market. In addition to, further investigate other factors that would

[5] Alhomoud, N. Maseeret thalatheen aam leqesm oloum almektabat wa almaloumat wa temohateh [The department of library and information science: thirty years of direction and ambitions], lecture, Kuwait, 2007.

facilitate or inhibit change and adoption, if change is necessary. The next chapter, Research Methodology, will pave the way to collect such data.

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Chapter Four: Research Methodology

4.1 Introduction

Chapter two, literature review, has identified a gap in the literature on the students' ICT skills in Kuwait, the role of professional associations, employers' needs and challenges and barriers to its adoption. *Chapter three*, the research background, has provided an overview to the study in terms of the education in Kuwait and the application of ICT into the curriculum. This chapter outlines how the research was carried out by discussing the philosophy, methodology, methods and techniques that were used to collect valid data. The research techniques used were interviews, surveys, focus group and content analysis. Combining these techniques helped to gain reliable and in-depth of information in order to achieve appropriate results. The aim of the research is to identify and measure the level of students' ICT skills, while obtaining valid and accurate data. The research design including methods, pilot study, research sample, data collection, analysis and ethics will be also discussed.

4.2 Research Philosophy

The discussion about the "nature of social research" is an active one and is centred around the philosophical aspects of epistemology and ontology (Walliman 2006, p.15), which represent contradictory ideas about what knowledge is, our relationship with nature, and our ways of thinking (Walliman 2006, p.5.). Epistemology is connected with methodology. Hence we need to consider the definition of the following terms to understand the implication of epistemology and ontology:

Methodology:

- Assumptions on which research approaches are appropriate for generating valid evidence (Beynon-Davies 2002, p.559).
- The strategy, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes (Crotty 1998, p.3).
- General principles and traditions of data collection (David & Sutton 2004, p.365).

Epistemology:

- How we know things and what we regard as acceptable knowledge (Walliman 2006, p.15).
- What is or what should be regarded as acceptable knowledge in a discipline (Bryman 2004, p.11).

Ontology:

- That branch of philosophy concerned with theories of realities (Beynon-Davies 2002, p.559).

As pointed out by Beynon-Davies (2002, p.559) that these aspects (methodology, epistemology, and ontology) are important for any kind of research, for they define fundamental assumptions about how reality exists and appropriate ways of building knowledge of reality.

Authors have looked at these terms and defined them differently. Reviewing social research literature (Walliman 2006, Beynon-Davies 2002, Crotty 1998 and Bryman 2004) it was found that each of these terms were related to the other. Accordingly, ontological and epistemological issues were apt to merge together (Crotty 1998, p.10) and the ontological shapes the epistemological (Walliman 2006, p.69). Beynon-Davies (2002, p.559) stated two philosophical positions: positivism and interpretive that wrapped up ontological, epistemological, and methodological assumptions. When epistemology and ontology were discussed by authors such as Bryman (2004), Walliman (2006), Bernard (2000), David and Sutton (2004), Williams and May (1996), Beynon-Davies (2002) and Crotty (1998) only the last two mentioned methodology in relation to them.

Methodology is concerned with certain approaches of collecting and analysing data, it has a natural affinity with certain epistemological and ontological assumptions (Beynon-Davies 2002, p.559). It is the research's particular design that shapes the choice, use, and the underlying principle it provides for the choice of appropriate methods and forms wherein these methods are employed (Crotty 1998, p.7).

The social research authors reviewed above (Bryman 2004, Williams & May 1996, Bernard 2000, Crotty 1998, David & Sutton 2004, Walliman 2006, Lincoln & Guba 2000) have defined research methodology differently and have taken different approaches when discussing it.

4.3 Research design

Research design is the framework that the research fits into, depending on the theory and nature of the research problem. It reinforces all of the research activities (Walliman 2006, p.10). The purpose of a research design is to present a structure for the collection and analysis of data (David & Sutton 2004, p.133), in a way that aims to merge its significance to the aim of the research (Selltiz *et al*. 1976, p.90). It is the research aim that has formed the research design to be used in this study, in order to accomplish its aim, objectives, and to answer the research questions.

The aim of this research is to identify the level of ICT skills that students of the Department of Library and Information Science (DLIS), College of Basic Education (CBE), Public Authority of Applied Education and Training (PAAET), possess and what employers expect. It is proposed that the underlying epistemology for this research will be that of positivism and interpretivism. The nature of this research is quantitative and qualitative, employing different methods to be used. This combination of methods can be used as a framework to undertake the research design of this research. Hence, research methods; quantitative and qualitative, epistemological stance, positivism, and interpretive will be discussed.

4.3.1 Research methods

Research methods are general approaches of performing research. A research normally uses one or multiple research methods such as laboratory and field experiments, surveys, case studies, forecasting, simulation, action research, and ethnographies. Research methods are also categorised in terms of whether they presume a positivism or interpretive philosophy. Positivism philosophy uses quantitative approaches whereas interpretive uses qualitative approaches in collecting and analysing data (Beynon-Davies 2002, pp.560-563).

4.3.1.1 Quantitative research methods

Quantitative research frequently stresses measurements in the collection and analysis of data (Bryman 2004, p.542). Quantitative data consists of closed ended information such as that obtained on attitude, behaviour, or performance instruments. The collection of quantitative data may include the use of closed ended checklist, against which the behaviour observed is checked (Creswell & Plano Clark 2007, p.6). Quantitative data are characterized to be hard, reliable, and unambiguous, depending on the accuracy of their measurement (Bryman 2004, p.287).

The researcher's point of view structures the research in a quantitative approach. Although quantitative researchers are concerned with people's behaviour, researchers are rather distant and uninvolved with their respondents. This is because quantitative researchers feel that their objectivity might be modified if they were involved with their respondents (Bryman 2004, p.287). The researcher's intentions, expressed in the objective of the study, are to see how the data provided by the respondents fits an existing theory in order to support or disprove it. The literature review in a quantitative study sets up the importance of the aim and the research problem in research. These are used to identify specific questions that are unanswered in the literature and that need to be answered from participants. Accordingly, both the researcher's intention and the literature review directs towards closed ended questions that relate variables to one another (Creswell & Plano Clark 2007, pp.28-30). Quantitative researchers are often characterised in being involved in determining large-scale social trends and connection between variables (Bryman 2004, p.287).

Theory, in quantitative research, can be described as something that precedes research (Bryman 2004, p.24). Quantitative researchers obtain answers to test their theories. Theories are composed of hypotheses or research questions that are made up from variables. Quantitative researchers test these research questions to support or disprove the relationship statements in the theories (Creswell & Plano Clark 2007, p.30). Theory and concepts are tested in quantitative research. Quantitative researchers employ measured concepts of their research and apply them on the research instrument being used, thus theoretical work precedes the collection of data. Moreover, in quantitative research the approach is highly structured. This allows the

researcher to investigate the concepts and issues of the research (Bryman 2004, p.287).

Quantitative research as a research strategy is deductive, objectivist and integrates a natural science model of the research process, one influenced by positivism; nevertheless quantitative researchers do not always refer to all of these three approaches (Bryman 2004, p.542). Quantitative research strategy has integrated the norms and practices of the natural sciences model and of positivism in particular (Bryman 2004, p.19). Quantitative research design in the social sciences should stay within the traditions of the positivism (David & Sutton 2004, p.133).

4.3.1.2 Qualitative research methods

Qualitative research uses words in the collection and analysis of data (Bryman 2004, p.542). Qualitative data consists of open ended questions gathered through interviews with participants, allowing participants to answer in their own words. The collection of qualitative data is achieved by observing participants or sites of research, gathering documents, or collecting audiovisual materials (Creswell & Plano 2007, p.6). Qualitative research is characterized by gaining rich and deep data (Bryman 2004, p.287).

In qualitative research the point of view of the participants structures the research. That is why the researcher looks for close involvement with its participants, so that the researcher understands the world through their view (Bryman 2004, p.287). The researcher's intentions, what the researcher hopes to accomplish during a study, is to learn the participants' view about a certain phenomenon. The review of related literature in qualitative research, usually short and not much detailed, is used to provide evidence for the purpose of the study. Thus, in qualitative literature reviews, because the intent is to learn from the participants, the questions are open ended. This allows participants to answers questions differently from their own point of view and the understanding of these open ended questions will lead to different and complex answers. To obtain the needed data the researcher needs to focus on a single phenomenon and learns about it in depth (Creswell & Plano 2007, pp.28-30). Qualitative researchers are concerned with small-scale aspects of social reality (Bryman 2004, p.287).

Theory, in qualitative research, can be described as something that emerges out of research and of data collection (Bryman 2004, p.24). Theories in qualitative research are tested during the research process (Bryman 2004, p.271). As a research strategy qualitative research is intuitivist, constructionist and interpretive. Qualitative researchers do not always use all of these aspects together (Bryman 2004, p.542). Qualitative research strategy has rejected the norms and practices of the natural sciences model and of positivism in particular to adopt interpretive as its epistemological orientation (Bryman 2004, p.19).

4.4 Epistemological position

Bernard (2000, pp.8-9) asserted that there are several epistemological positions of acquiring knowledge *rationalism* (humans gain knowledge through their capacity to reason) or the competing epistemology *empiricism* (humans gain knowledge through their sensory experience). Another division of acquiring knowledge relates to the assumption of scientific method often called *positivism* or its alternative the human subjectivity method often called *interpretive,* both will be discussed in more detail.

As referred to in Crotty's framework the epistemological position (theory of knowledge) embedded into the theoretical perspective, then informing the methodology and methods in this research will be *positivism.* As Crotty (1998, p.16) puts it "the epistemological stance of objectivism will be considered in the context of positivism, with which it is so closely allied". The theoretical perspective, the philosophical stance laying behind a methodology that provides a context for the process involved and a basis for its logic and its criteria, which were applied, was that of *interpretive.*

4.4.1 Positivism

Is the application of the natural sciences to the study of social reality. Positivism aims to establish cause and effects. It is an objective approach that can test theories and establish scientific laws (Walliman 2006, p.15). "Positivist approach looks at society as the focus for research, and through understanding its internal laws and establishing relevant facts, we can in turn understand how and why individuals behave as they do" (Walliman 2006, p.23). Crotty (1998, p.12) stated that "without a thoroughly

objectivist epistemology", positivism would not be as that what we know of today (Crotty 1998, p.27).

Bernard (2000, p.17) pointed out that "the central position of positivism as a philosophy of knowledge is that experience is the foundation of knowledge". He elaborated that we record what we experience visually, auditory, and emotionally. These results are then said to "produce a set of 'true', precise and wide-ranging 'laws' of human behaviour". Then "we would be able to generalise from our observations on social phenomenon to make statements about the behaviour of the population as a whole". That is how positivism explains human behaviour in term of cause and effect. Data is then collected on the social environment and people's reaction to it (May 2001, pp.10-11).

Positivism uses quantitative methods to collect data in order to generalise conclusions by process of deduction (Saunders, Lewis & Thornhill 2007, p.120). An alternative to positivist approaches is the qualitative interpretive approaches (Cohen, Manion & Morrison 2000, p.21). All theories that are structured within the context of the interpretive paradigm tend to be anti-positivist or post-positivism; post-positivist and interpretive will be discuss accordingly.

4.4.1.1 Post–positivism

Post-positivism stays in the broad tradition of positivism and maintains a number of its features (Crotty 1998, p.184). It discusses probability rather than certainty. It claims a certain level of objectivity rather than absolute objectivity and it seeks to approximate the truth rather than aspiring to seize it in its essence (Crotty 1998, p.29).

4.4.2 Interpretive

An interpretive approach focuses on social action (Cohen, Manion & Morrison 2000, p.22). It aims to reveal interpretations and meanings (Walliman 2006, p.15). Interpretive is a contrasting epistemology to positivism (Bryman 2004, p.13). Interpretive "maintains that the view of the world that we see around us is the creation of mind" (Walliman 2006, p.20). This means that we can only experience the world personally through our perceptions that are influenced by our beliefs.

Theory to interpretive researchers should not precede research but follow it. The generated theory should make sense to those whom it applies to. The aim of scientific investigation here is to understand how things in reality goes on at one time and in one place and to compare it to what goes on in different times and places. "Thus theory becomes sets of meanings which yield insight and understanding of people's behaviour" (Cohen, Manion & Morrison 2000, p.23). Interpretive uses qualitative methods to collect data by the process of induction but it may arrive at uncertainty, where there is a less concern with the need to generalise (Saunders, Lewis & Thornhill 2007, p.120).

Positivism approach has affirmed its understanding of the physical world. The interpretive approach, on the other hand, fits into understanding the social world. Beynon-Davies (2002, p.560) argues that organisations are part of the social world and ICT is part of the physical world. Therefore both of these positions are valid within this research, in which data were collected on students' ICT skills (positivist and interpretive approach, employing quantitative and qualitative data), employers, teaching staff, and content analysis (interpretive approach, employing qualitative data).

4.5 Research techniques

Research techniques are means that are used to collect, analyse, and represent data. The methods that were used in this research study were questionnaires, semi-structured interviews, focus groups and content analysis (Figure 4.1). A combination of several techniques provides "a more complete picture of some phenomenon through exploiting the inherent strengths of each technique" (Beynon-Davies 2002, p.561). Thus, allowing better collection and analysis of data and reaching matching or conflicting results. To achieve the aim and objectives of this research both positivism and interpretive approaches were adopted. These approaches entailed quantitative and qualitative research techniques, employing the use of mixed methods for greater confidence in the research findings (Bryman 2004, p.275).

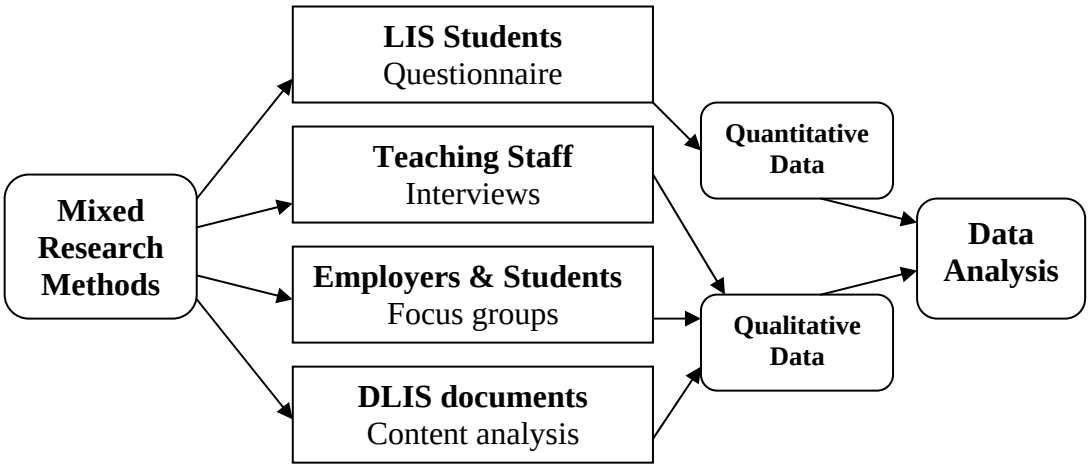

Figure 4.1 Research Methods and technique

4.5.1. Mixed methods

The use of mixed methods involves using more than one method in research. It employs both quantitative and qualitative research strategies for the purpose of cross-checking to arrive at confidence in the research findings (Bryman 2004, p.275), from more than one viewpoint. It is often referred to as a way of getting the best of the available data, both quantity and quality of data, but it is not a guarantee of success (David & Sutton 2004, p.45). It may then produce disagreement or confusion.

In this research the use of mixed methods were used in sequence procedures (Creswell 2003, p.212). The second method (focus groups) was used to explain and find evidence from the first methods (interviews and questionnaires). The interviews (qualitative) were used in line with the questionnaires (quantitative) to explore views and concepts of respondents (stage 1). Then they were followed by focus groups (qualitative), after initial analysis of the first stage data, to gain a detailed exploration and to clarify some of the research issues from other few respondents (stage 2). This helped in generalising the findings onto the population of the research. Content analysis of web-pages and related documents were also used consecutively and where needed. The use of such approaches in this research is called mixed methods. Each of the methods will be discussed subsequently.

4.5.1.1 Questionnaires

The questionnaire method is an inexpensive, easy and quick to administer, requires little explanation, can be sent by mail, (Selltiz *et al.* 1976, p.294) or electronically by e-mail. It is also short to reduce "respondent fatigue" and the researcher's effects are eliminated. Questionnaires are sometimes handed out by the researcher and collected after they have been answered. This is usually referred to as self-completion questionnaires (Bryman 2004, pp.132-133), which were used for this research study. Moreover, when a questionnaire is delivered by a researcher it helps respondents to overcome difficulties of questions and that personal persuasion is used to ensure a high response rate (Williams & May 1996, p.88).

Questionnaires usually have standardisations in their questions, wording, and instructions. This in turn may have different interpretations for different people. Nevertheless, wording could be changed to achieve meaningful uniformity of questions by piloting. This will ensure that every respondent understands a question in an essentially similar way (Selltiz *et al.* 1976, p.295).

Questionnaires make respondents free to express their views and have greater confidence that their responses will not be identified. Respondents also may have more time to think before responding, can consider each question carefully (Selltiz *et al*. 1976, p.295), and may complete them at the speed they want to take (Bryman 2004, p.134).

Questionnaires usually receive high respond rates when they are short, clear, easy to answer, area subject of interest to respondents, simple to return, sponsored by a recognised institution, and presented in a motivating manner to respondents (Selltiz *et al.* 1976, p.297).

The questionnaire technique was used because of the previously mentioned advantages and also because it was suitable for collecting quantitative data that answered the research questions. One questionnaire was administered to LIS students.

4.5.1.2 Semi-structured Interviews

The personal interview method can be applied on almost all segments of the population (Selltiz *et al.* 1976, p.296). The qualitative interview, referred to as the semi-structured interview, emphasises more on generality in the formulation of initial research ideas and on interviewees' own perspectives resulting in rich and detailed data. Thus, more interest in the interviewee's point of view is generated and what he sees as important is encouraged (Bryman 2004, pp.319-320).

The interview questions can be easily clarified if misunderstanding appears and before the answer is written (Selltiz *et al.* 1976, p.297). New questions can be raised and the order and wording of questions can be modified (Bryman 2004, p.320).

Interviews in this study were carried out with public and private employers (being responsible in the employment of LIS graduates), teaching staff and LIS students. All interviews were recorded to retain a record of what has been said.

4.5.1.3 Focus group

The focus group is a qualitative research method. It is a group discussion with at least four interviewees emphasizing a specific topic that is examined in depth. Thus, the researcher is interested in the ways that the interviewees discuss a certain issue and how they respond to each other as members of the group (Bryman 2004, p.346). This will generate more useful, interesting data and discussion (David & Sutton 2004, p.92).

Bryman (2004, pp.346-347) states several reasons for performing focus group:

- To discuss with people who have had a certain experience in a relative way about that experience.
- To develop an understanding about why people think the way they do.
- Participants can raise issues and opinions of importance that are not anticipated by the researcher.
- Participants are able to argue and challenge each other's views and replies.
- The researcher is offered the opportunity to study the ways in which participants together make sense of a phenomenon and create meaning around it.

The focus group method was used, since, it does not replace surveys, but it complements them. Moreover, it was used to help interpret the results of surveys (Bernard 2000, pp.207-208). The focus group method was used in this research to attain an in-depth understanding of the employers' and students' views in order to clarify the results generated from the analysis of the students' questionnaires and employers', teaching staff and students' interviews.

4.5.1.4 Content analysis

Content analysis is a method of examining records such as documents or publications of all kinds (Walliman 2006, p.112). It is an unobtrusive research method that does not need respondents' involvement (Bryman 2004, p.196). It is used to add to a study and help validate its findings. Content analysis is concerned with testing hypothesis or assumption or inductively developing standards (Baker 1994, pp.273-274). The purpose of content analysis is that the analysed content must be related to other factors about the documents, such as the persons stating the content or about the intended audience or the times in which the content was produced (Baker 1994, p.268).

Content analysis was used to analyse and compare the ICT courses of LIS schools (Chapter Two, section 2.2.4 ICT adoption studies by LIS programmes) and in Professional Associations' ICT courses guidelines and standards (Chapter Two section 2.5 Professional associations). It was also used to analyse the DLIS ICT courses offered to enrich the analysis of the quantitative and qualitative data (Chapters Five, Six and Seven) and the discussion (Chapter Eight).

4.6 Research Sampling

The main aim of the research is to explore the ICT skills of students at the DLIS. The main targeted population of this research that serve to achieve the aim were LIS students, academic staff, and LIS employers.

4.6.1 LIS Students

All students in their 1st year and 4th year were selected (Table 4.1). The registered students in these two years as of the year academic year 2007/2008 were 284. Probability stratified sampling was used rather than using a sample frame, in which

all numbers of the students were listed. This kind of sampling ensured that the sample consisted of students from the identified strata (Walliman 2006, p.77), for example males and females in their 1st and 4th years of study. The selection of all students in these two years helped in reducing any bias that would generate from sampling and to have a more reliable data. In addition, sixteen students of them (male and female) were interviewed based on their indications to participate when they provided their contact details in the returned questionnaires.

Table 4.1 LIS students sampling

	Year of Study	**Total**
LIS Students	1st Year	**177**
	4th Year	**107**
Total		**284**

As for the students' focus group sample, the researcher contacted two colleagues to put up colourful posters in the department to encourage students' participation. The aim of the focus group was explained on those posters. There was no response for the students' advert provided, except for one male student. Plan B was to ask the teaching staff for their help, by asking their students to volunteer to join the focus group. Students were encouraged by their teachers to participate. The final number of students wishing to participate was 13, six males and seven females (Table 4.2). Consistent with the aim of the focus group, the students represented both genders and were trained at all the organisations training LIS students, except for one organisation that was not included.

Table 4.2 Focus Group sampling

Participants	**Number of Participants**		**No. of focus group(s)**
Employers	Public	7	1
	Private	0	
Students	Males (4th year)	6	2
	Females (4th year)	7	
Total		**21**	**3**

4.6.2 ICT courses teaching Staff

The number of teaching staff during the interview process at the DLIS was 47, of which 12 were excluded for they were pursuing their PhD studies in USA, UK and Australia. Out of the remaining 35 only 12 were involved in teaching ICT courses, they were all selected for the semi-structured interviews. Non-probability purposive sampling technique was employed, thus the researcher thought that this sample was the "typical" based on certain selection criteria (Walliman 2006, p.79). For example they instructed ICT courses and trained LIS students.

4.6.3 LIS Employers

LIS graduates' employers, demanding ICT skills, opinions and views are very important in developing and planning students' ICT skills education and training programmes. Therefore, one of the main objectives of this research was to identify employers' opinions and attitudes towards students' ICT skills. The non-probability purposive technique sampling was also employed for choosing the interviews' respondents from their organisations' web sites. The sample was selected and was expected to be familiar with:

1. Involved directly or indirectly on the employment process.
2. Have a role in work placement training.
3. Awareness of ICT skills required.

Tables 4.3 and 4.4 show the public and private employers of LIS students' and the selected sample for the interviews.

Table 4.3 The main public sector employers' of LIS students

Employer	Interviewee position	Number
National Scientific and Technology Information Centre (NSTIC)	Information specialist	3
The Educational Resources Department and Libraries of the Public Authority for	Director of ERDL	1
	Assistant Director of ERDL	1
	Head of Division	2

Employer	Interviewee position	Number
Applied Education and Training (PAAET)	Librarians	4
The Libraries Administration and Libraries of Kuwait University (KU)	Director	1
	Assistant director	1
	Head of Division	2
	Library head	1
The Information Centre of the Ministry of Education (ME)	Observer of professional affairs	1
	Information specialist	2
Total		**19**

Table 4.4 Private sector employers' of LIS students

Employer	Interviewee position	Number
Gulf investment cooperation	Library head	1
Kuwait Chamber of Commerce and Industry	Librarian	1
Albabtain Library	Library director	1
American University of Kuwait	Library director	1
Gulf University of science and technology	Librarian	1
Albayan bilingual School	Information specialist	1
Universal American School	Library director	1
Total		**7**

In addition, the employers' focus group participants were located through Kuwait's e-government web site from a list of public and private employers (Kuwait e-government 2007). The researcher contacted the employers' participants via email followed by phone calls to take part in the focus groups. Cancellations started to appear from the private sector; hence non-probability snowball sampling strategy was employed, where other participants were introduced to the researcher (especially the private sector). The participants of the employers' focus group were nine, but a last minute call from two participants of the private sector decreased the number to seven (Table 4.2). Unfortunately, none of the private sector participants took part. They

justified this by stating that they were not training LIS students, had no idea on the LIS curriculum, and no time to participate, although the focus group was conducted during non office timing.

4.7 Reliability and Validity

Reliability is consistency, the respondent's ability to give the same answer at a different time. The reliability of an instrument is assessed by retesting the questions. That is asking the same question at different periods, but this may not be practical and respondents may remember their previous answers. However, reliability could be enhanced by carefully structuring and piloting of questions making use of previously used surveys. In structured interviews the interviewers' skills are essential, where two or more kinds of interviews are used. As a result this multiple use of interviews improves reliability. On the other hand *validity* is the extent to which an instrument measures the concept it is assumed to measure (David & Sutton 2004, p.171).

In this research the questionnaire was composed based on earlier relevant literature surveys (Abdel-Motey & Al-Anzi 2003, Minishi-Majanja & Ocholla 2004, Aina & Moahi 1999b, Lutwama & Kigongo-Bukenya 2004, and Ocholla & Bothma 2007). There was one question composed by the researcher and was not previously used by others. Therefore, there was a need to test its consistency. To assess the internal consistency of this question's scale, that is to check the degree that the items of the scale are all measuring the same attribute, the Cronbach alpha value was measured. This was measured to ensure the reliability of using this scale. The Cronbach alpha of a scale should be above 0.7 to be an acceptable reliability coefficient (Pallant 2001, p. 85). The ICT skills level scale shows adequate internal consistency with Cronbach alpha value of .763 supporting its reliability (Table 4.5).

Table 4.5 Reliability Statistics

Cronbach's Alpha	N of Items
0.763	6

The multiple uses of the interviews and the focus groups in this research improved their reliability. In addition, to assure the content reliability and validity of all the research methods (questionnaire, interviews, and focus groups) piloting was conducted as discussed next.

4.8 Pilot and pre-testing

Piloting was done to ensure that the instructions, scale items, language, and understanding of questions used are clear (Pallant 2001, p.4). Also to determine the scaling and the required time to conduct the questionnaire, interviews, and focus groups. The pilot study was conducted in three stages and as follows:

At the first stage, the questionnaire survey was piloted in English on six students at Loughborough University who had the same background education and culture of the research's sample. After the rewording and restructuring of the English version, the questionnaire was translated and piloted in Arabic, the official language in Kuwait, on six students in Kuwait.

At second stage, the students' interviews were also piloted on the same students at Loughborough University. The employers and teaching staff interviews were piloted through email in Kuwait each to three participants. The three interviews were piloted in English and then in Arabic to ensure the conveying and understanding of the language.

At the third stage, the focus group guide was piloted on students and employers in Kuwait to ensure the conveying of ideas and meaning. Finally, all proposed changes to scaling, wording, layout, and instructions were made and the final versions of the questionnaire, interviews, and focus group guides were produced.

4.9 Data collection

The data collection was conducted into two stages. Stage one started from November, 2007 and was completed in December, 2007. Stage two started and was completed in March, 2008. Personal contacts with managers, divisions' heads and libraries' representatives via email, official written letters, and telephone calls were followed

by meetings, if necessary. Teaching staff permission was sought to distribute the questionnaire during the end of their classes. Moreover, a timetable was set and then presented to all participants indicating the date and time of agreed meetings of interviews and focus groups. The data collection methods used are explained below.

4.9.1 Questionnaires

The questionnaire was composed of twenty six questions (Appendix 7). All of the questions were closed except for two that had a choice of "other (please specify)". The closed questions ranged from factual to attitudinal which would be easy and quick to answer. The ordinal scale measurement, a five-point Likert scale, was used for one question. This question identified the students' perception on their level in each of the ICT skills. In addition, the semantic differential scale was used for eight questions to identify the students' attitude towards the training and teaching of the ICT courses; their motivation and interest in improving their ICT skills; the usefulness of these skills; how difficult they found them; and their confidence in using them. It should be noted that questions about the ICT courses delivered at the DLIS were not included because the 1st year students (79%) had not taken them. Moreover, the questionnaire included questions to explore the students' familiarity with the basic concepts of ICT and their depth of knowledge. The questions were grouped into the following four sections:

1) Personal information
2) ICT skills
3) ICT skills training and the curriculum
4) Developing ICT skills

The distribution of the questionnaire started on the 12th, November 2007 and was completed on the 27th, December 2007 and took place in conjunction with the employers' and teaching staff interviews. The questionnaires were self-administered to the 1st year and 4th year students at the DLIS during the last ten minutes of their lectures. This achieved a very good response rate of 79% (Table 4.6). Some students did not participate due to their absence during the survey period.

Table 4.6 Questionnaires distributed and received

Gender	Year of study	No. of Students	Received Questionnaires	%
Males	1st year	73	51	69.9
	4th year	48	41	85.4
Females	1st year	104	82	78.9
	4th year	59	51	86.5
Total		**284**	**225**	**79.2**

4.9.2 Semi-structured interviews

During the first stage of data collection qualitative data were gathered through interviews with the research's main subjects; employers, teaching staff, and students. The interviews were carried out from 15th November, 2007 until 27th December, 2007 simultaneously with the students' questionnaire survey. Except for the students' interviews that were conducted after the students completed the questionnaire.

The semi-structured interviews were conducted in 11 different organisations in Kuwait that employed and trained LIS students, four public and seven private. The employers' interviews were carried out at the employers' offices in their organisations. The teaching staff and students' interviews were carried out at the DLIS offices, meeting rooms, library, and ICT laboratories. The interviews were done in Arabic, English, and sometimes a mixture of both. Before the interviewing process some participants requested to view the interviews' question, a copy of the interview was sent to them with a covering letter explaining the research's aim.

As the process started the aim of the research was identified and the interviewees were assured of the confidentiality of the process. The interviewees' permission were sought to tape-record the interviews, nevertheless nine have refused. The duration of the employers' interviews lasted from 30-45 minutes; the teaching staff from 50-80 minutes; and the students' from 25-35 minutes. The interviews' questions were prepared as follows:

1. Employers' Interview

The employers' interview consisted of fifteen questions divided into four sections: Interviewee personal details; ICT skills; ICT skills teaching and training; and ICT skills barriers (Appendix 8).

2. Teaching staff Interview

The teaching staff interview consisted of twenty one questions divided into three sections: Interviewee personal details; ICT skills; ICT skills teaching and training; ICT skills and market needs; and ICT skills barriers (Appendix 9).

3. LIS Students' Interview

The teaching staff interview consisted of twelve questions divided into four sections: Interviewee personal details; ICT skills; ICT skills teaching and training; and ICT skills barriers (Appendix 10).

The interview questions were informally consulted in some interviews, especially the initial ones, to follow up the sequence of the questions. Any misunderstanding or confusion was clarified by the researcher.

Three different kinds of interviews (employers, teaching staff and students) were conducted. From which, fifty-four interviews were carried out (Table 4.7). A number of 26 employees from eleven different organisations participated in the interview process. Out of this number 19 were from the public sector, representing four different organisations and seven from the private sector, each representing a different organisation. The number of teaching staff interviewed was 12. The number of the students who agreed to participate in the interviews was 25, by providing their contact details in the questionnaire, they were all contacted. Sixteen males and females who were able to attend, according to the set dates and time, were interviewed.

Table 4.7 Interviews conducted

Respondents	No. of Interviewees	Remarks
Employers	26	19 public and 7 private
Teaching staff	12	
Students	16	8 males and 8 females
Total	**54**	

The researcher encountered some problems using the interview methods. For example, although the researcher emailed and called the interviewees an hour before each interview, some of the respondents were not punctual, some cancelled their

appointments, and some needed rescheduling. This resulted in the cancellation of some of the interviews and appointing other participants. In addition, to some interruption that happened during the employers' interviewing initiated by telephone calls.

In addition, one interview was conducted with the head of the DLIS during the thesis writing up period (Appendix 11), in July 2009. The aim of this interview was to update the researcher with any adjustments made to the ICT curriculum, courses added, and plans made. It consisted of ten questions divided into four sections: interviewee personal details; recent changes; assessments and training; and future plans.

4.9.3 Focus groups

Focus groups were used as the second stage data collection method, to obtain more in depth data on some of the research's issues and verify some other issues. The ICT courses teaching staff were excluded from the focus group sample because they all have already participated in the interviews.

The focus groups questions were prepared according to the themes that have emerged from the initial analysis of the interviews and questionnaires. The three focus group questions were broken down into six to seven key questions and six opening, transition and closing questions.The focus groups questions were prepared into guides as follows:

1. Employers focus group guide

The employers' focus group guide consisted of six key questions divided into three issues: Graduates ICT skills and market needs; Collaboration in curriculum design and implementation; and ICT skills learning style. In addition to, six opening, transition and closing questions (Appendix 12).

2. Students focus group guide

The students' focus group guide consisted of seven key questions divided into three issues: Graduates ICT skills and market needs; Collaboration in curriculum design

and implementation; and ICT skills learning style. In addition to, seven opening, transition and closing questions (Appendix 12).

The arrangements for the second stage started one month earlier before the focus groups took place. The researcher emailed and called the employers' participants before and after traveling to Kuwait to insure their participation. The aim of the focus group, issues to be raised, and the expected duration were all made clear to them. All the dates, events, and venues were organised upon the researcher's arrival to Kuwait.

The data collection of the focus groups started in 17, March 2008 and was completed on the 26, March 2008. Employers and LIS students were contacted to participate in focus groups. The research aim was clarified to the participants before the process and they were assured to withdraw without any obligations. The first focus group consisted of public employers, employing (or intend to employ) LIS graduates. The second and third focus groups consisted of the 1st and 4th year LIS students (Table 4.8).

Table 4.8 Focus groups' participants

Focus group	No. of Participants	No. of focus group
1st FG: Public sector **Employers**	7	1
2nd & 3rd FG: 4th year **Students**	6 Males	1
	7 Females	1
Total	**20**	**3**

The two students' focus groups were carried out at the DLIS meeting rooms. The females' focus group took place with the female cohort while the males took place with the male cohort. The researcher and the assistant moderator organised the setting of the room. The assistant moderator took notes, showed participants their places, provided help when needed, and followed up questions and issued raised during the process. All the students turned up on time, they were all welcomed and seated. The aim and the topic of the focus group were described, insuring the confidentiality and freedom of opinions. The discussion started as the students were asked to introduce their work placement training organisations. This was intended so that the researcher

is introduced to the participants, since the students knew each other. Then the researcher posed some opening and transition questions to generate a relaxing atmosphere. The key issues were then discussed and traced informally by consulting the focus group guide. When all the issues were covered, the researcher summed up the process and asked the participants for their comments.

The employers' focus group was carried out in a hotel meeting room in which dinner was provided for participants. The researcher intended to do this in order to have a formal atmosphere and to motivate the participants to attend. A table was set with name tags for all the guests, with paper and pens. The assistant moderator, as in the previous groups, took notes showed participants their places, provided help when needed and followed up questions and issued raised during the process. In this particular focus group some participants were late, unlike the case with the students who all came on time. The participants were all welcomed and then seated. The purpose of the focus group was described, insuring the confidentiality and freedom of opinions. The researcher explained the aim, topic of the focus group, and gave a brief description of the DLIS programme. The discussion started as the researcher asked the participants to introduce themselves, their occupation and organisations. The next stage was to introduce the participants to the main theme of the focus group by investigating their knowledge on the definition of the ICT skills. Not everyone understood the meaning of the ICT term. In this case the assistant moderator handed out the definition of the term to insure that all that all participants were able to follow up the discussion. The key issues were then presented for discussion; the focus group guide was consulted for follow up. When all the issues were covered, the researcher wrapped up the discussion and asked the participants for their comments.

Although all the focus group events took place on time and went completely as planned, the only problem that was encountered was the private sectors' participation cancellations.

4.10 Data analysis

The quantitative and qualitative data collected through the mixed methods, were each analysed separately (Chapters Five, Six and Seven), at different stages and were then

all incorporated (Chapter Eight) to come to the research conclusions and recommendations (Chapter Nine). The data analysis three stages are indicated below:

At the first stage, and after the data collection process all the interviews (employers, teaching staff, and students) recordings obtained were transcribed into Arabic, translated, and then transcribed into English, which took an enormous effort and time. It was intended to start the analysis of the qualitative data first to obtain the main themes and sub-themes. The interviews were thematically analysed in order to present the respondents' views and explanations of the research's problem, while using the research's objectives as guidelines. Each of the interviews were analysed separately according to the themes that have emerged and then all three were put together for further analysis and interpretation.

At the second stage, the questionnaire responses were coded into a codebook (Appendix 14). This helped to define each of the variables, assigning numbers to the responses (Pallant 2001, p.12) and was applied in the analysis using the Statistical Package for the social sciences (SPSS) version 16 software.

Descriptive statistics were used to obtain frequencies and cross tabulation counts. Any association was investigated using cross tabulations and Chi-square. The significance level used was 0.05 to determine whether or not there was a significant statistical relationship between variables. In addition, non-parametric tests using Spearman's rho correlation coefficient was also used to identify the relationship and direction of the association between certain variables on ordinal scales.

At the third stage, thematic analysis was employed to present the respondents' insights, perceptions, and key points using the research objectives as guidelines. The three focus groups responses were analysed separately according to the key points that emerged and then categorised under main themes and sub-themes. All three groups were then put together for further analysis and interpretation.

4.11 Ethics

The Loughborough University Ethical Advisory Committee's Code of Practice on investigations involving human participants was assessed during the research procedures (Loughborough University 2003). Thus, the following was made:

- Participants were notified about the aim and objectives of the research to ensure their participation and obtain their approval. Contacts were made with the following organisations via email and phone calls to take part in the surveys:

1. DLIS at PAAET, Kuwait, to get their approval of students' and teaching staff involvement in the research (Appendix 15).
2. Employers that employ the bulk of the LIS graduates in Kuwait were contacted to get their approval of participating these include (Appendix 16):
    - National Scientific and Technology Information Centre (NSTIC) of the Kuwait Institute of Scientific Research (KISR).
    - The Educational Resources Department and Libraries of the Public Authority for Applied Education and Training (PAAET).
    - The Libraries Administration and Libraries of Kuwait University (KU).
    - The Information Centre of the Ministry of Education (ME).
    - The private sector employing or training LIS students.

- Participants were reassured that participation is voluntary and that they can withdraw at any time without giving any reason.
- Confidentiality of data collected was maintained. Participants' personal information such as name or personal student/employer identification number was not required.
- Full records of all the research procedures were maintained for the consultation of the Ethical Advisory Committee.

4.12 Conclusion

In this chapter the research's philosophy, design and methods were presented. The research was conducted in the previously discussed framework. The research was based on both quantitative and qualitative research methods and was thus positioned

in combined approaches positivists and interpretive. The methods and techniques used were relevant, in the case of this research, to these approaches. Hence the research was carefully conducted to have reliable and consistent data. The next chapter (Chapter Five) will present the analysis of the employers', teaching staff and students' interviews, since these were conducted initially, except for the students' interviews that were carried out after they responded to the questionnaire.

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Chapter Five: Qualitative data analysis of Interviews

5.1 Introduction

The data gathered through the face to face semi-structured interviews were proposed to collect qualitative data to supplement the quantitative data obtained through the questionnaires (Chapter Six). Thus, making it possible to explore the points of view and attitudes of the respondents on ICT skills, ICT courses, teaching methods, and the needs of the job market. Also, to identify factors influencing positively and negatively the improvement of students' ICT skills.

5.2 Characteristics of interviewees

A total of 54 (26 employers, 12 teaching staff and 16 students) respondents were interviewed. The 26 employers represented different occupations at their organisations. The public organisations were selected as they trained and then employed the bulk of DLIS graduates. The private sector organisations were selected because some of them employed, trained, or might employ or train these graduates. Out of the 26 respondents; two were directors of administrations, two were assistant directors of administrations, four were library directors, six were librarians, six were information specialists, four were head of divisions, one was an observer of professional affairs and one was a library head[6]. Of the 12 ICT courses teaching staff nine were PhD holders and three were MLIS holders[7]. The 16 student respondents were equally divided between males and females[8], all of them had responded to the ICT skills questionnaire in which they showed their willingness to participate in the interviews.

5.3 Organisation of data

The themes that have emerged were divided into six main sections as follows (Figure 5.1):

- ICT skills
- ICT skills training

[6] See appendix 17 for a breakdown of employers by kind of organisation, occupation, gender, degree and years of experience according to both sectors.
[7] See appendix 18 for a breakdown of teaching staff characteristics by academic status, gender, degree, years of experience, and ICT courses taught.
[8] See appendix 19 for a breakdown of the students' characteristics by year of study, gender, previous education and ICT skills level.

- ICT skills and the curriculum
- Factors influencing ICT skills development
- ICT skills and the market needs
- Other issues

Themes	Sub-themes	Employers	Faculty	Students
1. ICT skills	ICT skills definition	✓	✓	✓
	ICT skills practised.	✓	✓	✓
	Level of ICT skills.	✓	✓	✓
2. ICT skills and training	Previous education	✓	✓	✓
	During LIS school	✓	✓	✓
	Work placement training	✓	✓	✗
	Work placement plan	✓	✓	✗
3. ICT skills and the curriculum	ICT courses taught	✓	✓	✓
	ICT courses teaching environment		✓	✗
	Curriculum updating	✓	✓	✗
	Professional organisation standards		✓	✗
	Collaboration in curriculum design, implementation and in training	✓	✓	✗
4. Factors influencing ICT skills development	Lack of motivation	✓	✓	✓
	English language	✓	✓	✓
	Lack of Interest	✓	✓	✓
	Gender.	✓	✓	✓
	Social	✓	✓	✓
	Accessibility	✓	✓	✗
	Technophobia	✓	✓	✗
	Lack of time	✓	✓	✓
	Resources and facilities	✓	✓	✓
5. ICT skills and the job market needs	ICT skills Meeting the market needs	✓	✓	✓
	Other ICT skills needed.	✓	✗	✗
	Other needed skills	✓	✓	✗
	Private sector	✓	✗	✗
6. Other issues	ICT teaching staff	✓	✓	✓
	Non ICT courses	✓	✓	✓
	ICDL	✓	✓	✓
	View of profession	✓	✗	✓
	Name change	✗	✓	✗
	ICT skills development	✓	✓	✓

✓ Indicates respondents input.
✗ Indicates respondents had no feedback.

Figure 5.1 Thematic analysis of qualitative data: Interviews

5.4 ICT skills

This theme included sub-themes such as the respondents' perception of ICT skills definition, ICT skills practised, and the students' ICT skills level, each will be discussed as follows:

5.4.1 ICT skills definition

The researcher explained the topic and aim of the research, before each of the employers' interviews started. The respondents were asked about the term "ICT skills", some were not sure what it meant. Most respondents identified that they knew what "IT" was but not "ICT". As the researcher presented the definition to each respondent, before starting the first question, the term became clear. This was intended to be the case so that respondents would answer the interview questions clearly and in relation to the specified skills. Similarly, most of the teaching staff interviewed guessed the meaning, some were close to it as they pointed out some ICT skills and some others identified all the listed ICT skills.

The interviewed students had an idea of the ICT skills definition, as they had already done the questionnaire, in which the definition was attached. The students were questioned to identify whether they knew what ICT skills were, or whether they became aware of the definition when they completed the questionnaire. The 1st year students knew only some of the skills mentioned in the definition such as word processing and searching the internet, the skills they can actually perform. One respondent pointed out:

> *It was my first time when I answered the questionnaire; I didn't have any idea of it.*

The 4th year students seemed more confident about their ICT skills. Most of them thought they knew these skills from the ICT courses they took, except for database maintenance and webpage construction. Only one respondent mentioned that she knew database maintenance and webpage construction from her personal experience.

The range of respondents' different opinions illustrated that the ICT skills definition seemed to be a new term to the majority of them, some of the listed skills were not practised by students as will be illustrated in the following subtheme.

5.4.2 ICT skills practised

Respondents were asked about the ICT skills that were practised at their organisations. Some of the employers' respondents, in both sectors, were practising all of these skills at their organisations, they stated:

> *Yes, we practise all of these skills, we have an automated library system, our employees maintain the databases we have and have designed the library's webpage.* (Private sector)

> *Yes, all of these skills are very much practised here.* (Public sector)

Other employers' respondents stated that they practised all of the ICT skills except for database maintenance and web page construction, as respondents said:

> *Almost all of these are practised, except for databases maintenance it's not fully done by us, we only do minor faults.* (Public sector)

> *Yes, except for database maintenance and developing web pages it's done by another department.* (Private sector)

Although these ICT skills were recognised as being important, they were not fully practised in the organisations involved in the investigations. As one respondent confirmed:

> *All of these skills are preferable to have but new employees don't have all these skills. We require a specialised employee in at least one or two of these skills, so he would be efficient in it.* (Public sector)

Moreover, while the library has an integral role in complementing students' education, in providing material and tools, some of the employers' respondents thought that the students were not regularly visiting the only library at the college and were not practising their ICT skills, one respondent stated:

> *As a librarian working in the library, they should usually come to, I do not see them regularly using the library automated tools and technology.* (Librarian at the female cohort)

Another private sector employer thought that the library should be well thought of in terms of assigning students to practise their ICT skills, he said:

> *The library should be considered as a vital part of students' LIS studies, in which more assignments are given to students in searching and retrieving information.*

The teaching staff thought that students were practising less than the defined skills at the department. One female respondent teaching at the female cohort commented:

> *Nothing more than these, not even half of these skills are taught. For example they learn basic searching; they do not learn truncation or Boolean searching.*

The majority of the teaching staff also identified the specific ICT skills, which they were not teaching and therefore students were not practising at DLIS. These were database maintenance (not taught at all as a standalone course) and web page construction (taught at the male cohort only). Furthermore, one male respondent who teaches female students added:

> *Constructing and developing web page was added into one of the courses recently, this course is only taught at the male cohort. Before this the course was taught only in theory.*

The 1st year students' respondents stated that they all practised Power Point, word processing, internet searching and only one respondent knew about designing web pages, confirming the teaching staff view. Nevertheless, all of the 4th year students stated that they have practised all of the following ICT skills during their LIS education:

- using Microsoft office;
- searching the internet;
- searching and retrieving information from databases;
- emailing and online chatting;
- using the library OPAC.

According to the responses, employers confirmed that most of the ICT skills were practised at their organisations. However, the teaching staff and the students confirmed that while most of the ICT skills were practised, they identified certain ICT skills that were not practiced at the DLIS. Overall all the respondents (employers, teaching staff, and students) agreed that database maintenance and web page construction was not practised in some organisations and also at the DLIS, since it was taught only to the male cohort.

5.4.3 Level of ICT skills

Employers had different views and perceptions of the students' ICT skills level. Their views were classified from having "*very basic skills*" to "*very good*" as illustrated by respondents:

> *They have basic skills in some Microsoft applications, databases searching and library systems. They do not know how to use databases nor do subject searching unless they are trained on… they do not know how to do advanced searching using Boolean or Truncation. (*Public sector)

> *Some come with very good skills such as searching databases and retrieving information.* (Public sector)

In general, the employers viewed the 4th year students to lack skills in using library systems, maintaining and searching databases, and constructing web pages, whereas they had basic skills in using Microsoft applications and searching the internet. In addition, males were regarded to have better ICT skills than females. This was stated a great deal by respondents as they said:

> *Well, I was impressed with males when I trained them they had more technology skills than females who were shy and timid but were more likely to use their initiative than males. Overall both had skills in using Microsoft and internet searching. I would rate males to have better ICT skills than females.* (Private sector)

> *I realised that males are coming with better ICT skills; they maybe have had better opportunities to develop their skills in the department.* (Public sector)

From the point of view of the teaching staff the students' ICT skills level at the 1st year was that "*60% of them know how to use only Word applications and 70% know the basics of navigating the internet*". Moreover, the students' level of ICT skills at the first year ranged from being "*less than good*" and "*extremely low*" to being "*basic*" and "*good*". Illustrative comments were:

> *They (females) lack most of these skills but they are good at Word and Power Point. They have an idea about the rest nevertheless they don't have the skills.* (Male teaching females)
>
> *Some come with good ICT skills; have discussion groups and even their own web pages, while others don't know how to use the keyboard. It depends on the teacher to fill in the gaps and train each group according to its needs.* (Male teaching males)
>
> *We survey students every now and then, especially when we want to measure a certain skill. At the first year, their level is good and at the fourth year it could be rated as very good but of course it differs from one student to the other because ICT skills depends on training and practising these skills.* (Male teaching males)

At the 4th year, once students have taken the five ICT courses, "*after instruction, practically and theoretically, and different assignments given*" to students, the teaching staff thought that their ICT skills level was rated to range from "*good*" to "*very good but not excellent*". Another teaching staff respondent, teaching both males and females, found "*males sometimes more skilful than some teaching staff but the females' ICT level was less*". Thus, this again supports the employers' earlier opinion that male students had better ICT skills than female students.

However, according to the students' responses; the 1st year male students' self-rated their overall ICT skills level to range from "*good*" to "*very good*", while the female students self-rated their level to range from "*acceptable or less*", "*acceptable*", "*intermediate*" to "*very good*". On the other hand, the 4th year male students' level ranged from "*acceptable*" to "*very good*", whereas the female students level ranged from "*good*", "*very good*" to "*excellent*". According to this the 1st year male students' ICT skills level is better than the females but the 4th year female students are better than males (Table 5.1).

Table 5.1 Students' overall self-rated ICT skills level

No.	Gender	Year	Overall ICT skills level	No.	Gender	Year	Overall ICT skills level
1.	Male	1st year	Good	1.	Female	1st year	Acceptable or less
2.			Good	2.			Acceptable
3.			Good	3.			Intermediate
4.			Very good	4.			Very good
5.	Male	4th year	acceptable	5.	Female	4th year	Good
6.			Very good	6.			Very good
7.			Very good	7.			Very good
8.			Very good	8.			Excellent

Differences of opinion were evident regarding the students' overall ICT skills level. Students were not only graduating with different ICT skills, as mentioned earlier, but even with different level of those skills. However, male students were viewed to have better ICT skills by employers and teaching staff. This could be because of the training or different ICT courses they were taking. It is assumed that the students' ICT skills level (of each ICT skill) will be gathered from the quantitative data (Chapter Six). Moreover, one teaching staff respondent commented that "*students are now coping with technology more than they used to*", implying that the students' ICT skills level will become better than it used to be, as they practise using technology.

5.5 ICT skills Training

This section discusses the sub-themes of ICT skills training in relation to students': previous education, training during LIS School, training during work placement, and the work placement training plan.

5.5.1 Previous education

The majority of LIS students, if not all, are educated in government schools and have had few ICT skills training, if any, at these schools. Accordingly, the employers' respondents thought that the students' background education had an impact on their

ICT skills learning, development and the kind of training they have had, as one respondent said:

> *Understanding their educational background and where they come from, maybe what school they went to, differs in terms of what skills they were taught and what kind of training they need.* (Private sector)

Supporting the employers' views, the teaching staff, at the male cohort, thought that the 1st year students lacked most of the ICT skills and that "*some do not know how to use a keyboard because of their previous education*". In addition, the teaching staff, at the female cohort, found that the 1st year female "*students are not computer oriented especially those coming from public schools*".

The students' responses also agreed to those of employers and teaching staff, since 11 out of 16, respondents felt that they did not learn ICT skills from their previous education and only five replied that they did. However, the 1st year respondents expected to develop their ICT skills and get as much training as possible through LIS School. Some of the 4th year students affirmed that they have developed their ICT skills and recognised their importance during their LIS schooling, whereas two respondents added:

> *I didn't get enough training from my previous education and I don't believe I will get it from LIS School, unless more ICT courses are added. I don't think five courses will provide me with enough skills.* (Male 1st year)

> *I learned from LIS School but I think it's not enough they gave us the key skills and the more we practise the more skilful we get.* (Female 4th year)

The previous comments shows that students were not trained during their previous education, as mentioned by the respondents. It also raises the issue that the ICT courses and practical training offered at the DLIS might not be enough to provide students with the needed ICT skills, as students stated and as will be discussed in the following sub-theme.

5.5.2 During LIS school

ICT skills at the DLIS are taught through a block of eight ICT courses theoretically and practically and students are graded on both equally. Students are also given

regular assignments on every skill they take. This was the comment of most of the teaching staff respondents, illustrative comments were:

> *I usually give students the key concepts to use ICT and they should work hard to develop them and only interested students will improve their skills. Nevertheless, ICT courses are useless if their practical part is not practised.* (Male teaching males)

> *In my courses I teach them 30% of the course theoretical and 70% practical; because I feel that their weakness lies in not getting enough ICT skills training.* (Female teaching females)

The teaching staff were stressing both; the theoretical and practical parts of the ICT courses as essential in LIS studies. They thought that students needed more training that was why they stressed more on the practical training of the skills. The teaching staff also stated that they used the Worldwide Instructional Design System[9] (WIDS), curriculum-design software that helped them through the process of course and programme development, to develop the ICT courses they teach. One teaching staff said:

> *I check the content of my courses through using software: WIDS. It gives us ideas on designing courses, developing learning and teaching plans, and giving assignments so that we ensure that students get both parts out of the course.* (Male teaching females)

The employers agreed with the teaching staff views, they both thought that LIS graduates "*need(ed) more training during their four years of education they should come having all these skills*" and that "*the practical part of their studies should be applied to practise what they learn*". Employers also considered that students *"…have more idea about the theoretical part of their studies but they do not know how to apply it; they come ready to be employed in a traditional library, which eventually will not be there in the future*" (Public sector). Another respondent said:

> *It depends on what courses they have taken and what they have really practised. Some come with Word applications because they've used it for processing their assignments and research, while others may not know how to search because they did not take the course.* (Public sector)

[9] A non profit division of the Wisconsin Technical College System Foundation that offers training and course design services.

This implies that students at the 4th year are having different skills due to the ICT courses they take. The ICT courses are a block of eight and students get to choose four, these courses do not only differ in their outline (male and female cohorts) but they even differ from one teacher to another in the same cohort. However, some of the teaching staff was still "*trying to design a curriculum that reflects the theoretical and the practical, in which students are graded on both equally*".

Employers also thought that students were not getting enough ICT skills training because they were trained using only English versions of software and databases, which is their second language. They also thought that "*students should be trained using Arabic versions of tools and library systems and then they can apply this training on English versions*" (Private sector).

However, since they have recently joined the programme, the 1st year students could not judge whether they will get the needed ICT skills through LIS education or not. They pointed out that they were starting to improve their ICT skills and recognise their importance. They were depending on themselves in this learning, since ICT courses were not taught to 1st year students. They were also asking friends and teachers to assist them in developing these skills. Moreover, some of the students mentioned that they were required to use ICT and they were graded on it while others were not assigned to use ICT and thought "*that there are courses that do not need us to use ICT*". One 1st year respondent added:

> *I liked to develop my ICT skills but I had no opportunities during school and no encouragement, we couldn't see the need for it. I'm enthusiastic to see this here at LIS School.*

Although the 4th year students mentioned that they developed their ICT skills through LIS courses, they indicated that LIS ICT education alone was not enough to improve their skills. In order to improve these skills they took private courses, practised at home a lot, self educated themselves and asked friends, family, and teachers. They also thought that "*it totally depends on the student in developing and practising his own skills*".

The respondents' previous views indicated a gap in training students' ICT skills during their LIS education. This was, according to their views, due to the concentration on teaching the theory more than the practical training, training students in Arabic and not using the English language, and the less use of ICT or non use of in some courses.

5.5.3 Work placement training

Students get work placement training in libraries and information centres in Kuwait through a nine credit course they take during the last semester of their studies. There were different comments on the lack of the training by employers. Some thought that the duration of the training was "*not enough to improve their (students) ICT skills*". It was also "*not sufficient as it should be followed up by on the job training*". While others thought "*a full semester should be enough if we train them on only ICT skills not all other library functions and services*" (Public sector). Another reason, as perceived by one respondent, was that "*ICT is an ongoing process it should be stressed more; work placement training is not enough to employ them as information specialists*" (Private sector). Employers also thought that evaluating students' ICT level would help in delivering appropriate work placement training, illustrative examples were:

> *There is a gap in preparing students for their professional life. Students are not examined on their ICT skills, neither before nor after their work placement training, to assess their ICT skills.* (Public sector)

> *Students should be tested on their ICT skills' level before they come for training to know in what area they need more training.* (Public sector)

Moreover, some employers did not train students but they would "*welcome work placement training*" and that it "*would save us (employers) labour expenses*" (Private sector).

Teaching staff responses were grouped into three different views. *The first group* were dissatisfied with the students' work placement training. One reason for this was that it was not enough, in terms of time, to practise these skills. This supports the employers' previous responses. Another reason was that these skills should be

stressed more in LIS traditional courses. *The second group* were satisfied with the training to some extent because students were getting their "*training in organisations that have good level of ICT skills and are fully technological*". *The third group* thought that it depends on both the work placement training and the teaching staff efforts, one respondent pointed out:

> *This depends on the teaching staff and the training place. Teachers of ICT courses have different levels of ICT skills so it depends who the student took the course with. Moreover, in some organisations students learn very good skills while in others there is no technology. We cannot train them all in the same place because we have to send a limited number of students.*

Both respondents, employers and teaching staff, agreed that the students' work placement training was not enough and that students needed more training through concentration on ICT skills improvement and careful planning.

5.5.3.1 Work placement plan

The DLIS had set a work placement training plan, which was agreed upon by employers to train students during their work placement training. All of the employers considered having as such written plan, something crucial to improve the students' ICT skills. This question was asked to elicit, if the work placement training plan was used to improve students' ICT skills or not. It was understood from the employers' interviews that the DLIS had a work placement plan, in which students were trained on by employers but it was not used. The plan was general and did not specify the training of students to use ICT and then to further improve their ICT skills. It was a broad plan to train students in all the library's direct and indirect services, procedures and daily routines, whether electronic or manual. Employers pointed out that the work placement training would be better if:

> *(…) a plan was made in which aims were stated to be achieved through work placement training.* (Public sector)

> *(…) written procedures were made in which ICT skills were specified to be trained in.* (Private sector)

Moreover, employers preferred that "*students came with a written plan from the DLIS to improve their ICT skills during work placement*" (Public sector). This would help the DLIS "*in their (students) training and employing them later on*" (Public sector).

Supervision (being part of the work placement plan) during work placement training by teaching staff, MLIS holders and LIS Bachelor graduates, was also another barrier to improve students' ICT skills. One respondent from the public sector commented that training was not "*always done properly, it depends on the supervisor and there is often no plan to train students on*". In addition, some employers added that they had to make the work placement plan on their own, as they commented:

> *We train LIS students on our procedures during work placement according to a plan that we have set.* (Public sector)
>
> *We train students during work placement and we usually devise the training program.* (Public sector)

Whether a work placement plan existed or not also seemed not to be clear to the teaching staff. Some thought that there wasn't one, supporting the employers' previous views and others did not know if there was one. Illustrative comments were:

> *I do not know because I'm not involved in work placement.*
>
> *I do not know about work placement because I'm not concerned (in training).*

This raises the issue that some of the teaching staff were unaware of the work placement training at DLIS, although this training is very much related and represents the practical part of the ICT courses they teach. However, there seems to be a lack of a coherent written plan to improve the students' ICT skills.

5.6 ICT skills & the curriculum

This theme incorporates the sub-themes of the ICT courses taught, ICT courses teaching and learning environments, curriculum updating, the use of professional

organisation standards and collaboration in curriculum design, implementation, and training.

5.6.1 ICT courses taught

ICT courses at the DLIS are taught as compulsory and elective courses. The Computer in the library (preliminary) is the only compulsory course. The elective courses are a block of eight they are: Computer in information organisation (advanced); Computer database systems administration; Communication systems in library services; Information retrieving systems; Evaluating information automated programs; Information electronic tools; Modern and electronic publishing; and Information marketing. From this block a student chooses only four ICT courses, according to what the department offers every semester. The courses were not offered by the department every semester due to teaching staff shortage and some were offered at one cohort (male or female) and not at the other. Students can take the ICT courses starting from their second year.

The teaching staff commented that learning ICT skills depended "*on the teacher and the courses that the students took because there are eight options in the block of ICT courses and students get to choose only four*". In addition, "*content coverage of courses varies among teaching staff*". Moreover, they mentioned that a lot of reasons that caused the inappropriateness of the ICT courses taught. Some said that "*there are no course outlines provided for some courses*", "*the same course may have two different outlines*" and "*to teach a course you have to prepare everything*". Also, some of these courses were "*taught only theoretically with historical overviews and without practical training*". In addition, "*the ICT services and skills needed in most electronic and digital libraries are not presented through the courses offered in the department*".

The employers were asked for their opinion on the previous ICT courses. They appeared to have some understanding of the courses taught and problems associated with teaching the theoretical part that was more stressed than the practical, as mentioned earlier. Further, they identified some precise skills that the students needed training in, as illustrated in the following:

> *They lack knowledge of automated library systems and databases searching skills. They seem to lack the practical side of their studies.* (Public sector)

> *I think students are not given enough practical training during their LIS studies, 75% is theoretical. I can tell you this being a DLIS graduate myself, they need more training.* (Public sector)

> *Students need to be trained on the practical part of their ICT studies especially on electronic cataloguing and classification.* (Public sector)

Since it was the first semester for the 1st year students at the DLIS, most of them could not illustrate their point of view regarding the ICT courses taught. However, some thought that the importance of the ICT courses was "*significant through some of the courses the department is offering*". While most of the 1st year students supported the employers' and teaching staff views of stressing more on the theoretical part than the practical, one respondent added:

> *Most of the courses are theoretical. I don't think I will get the needed ICT skills, unless ICT is included in all daily applications of LIS courses.* (1st year)

Nevertheless, the 4th year students had a better vision of the courses because they have already taken them. They perceived that these courses were not delivering ICT skills as they should be. The courses needed to be more intensified "*to provide more practical training on ICT skills*". In addition, the courses did not teach "*new skills, some are repetitions of other courses and there is no connection between one course and the other in terms of progress*", some selective examples were:

> *The department is offering ICT courses as electives, so we do not get the chance to learn all of these skills, mentioned in the definition, or improve the ones we already have.* (Female student)

> *The ICT courses are selective and outdated, there is not enough training, the teaching staff skills are way behind and the only advanced and intensive ICT course available is elective.* (Male student)

The students respondents were also questioned on the ICT skills they have learned from courses since they have joined the department. The 1st year students listed the following:

- internet searching and selecting useful web sites;
- downloading some programs;
- submitting the assignments electronically;
- using Power Point for presentations;
- using the automated library system.

Although some of the skills (such as using library systems, searching databases, and using electronic cataloguing and classification) were viewed by employers to be insufficient and students needed training on them, the 4th year students listed the following as skills they learned and were good at:

- electronic cataloguing;
- database searching and information retrieval;
- online searching such as searching Dialog;
- Power Point and Excel;
- managing library systems such as circulation.

Furthermore, web page construction was listed by three 4th year (out of the eight males and females respondents) male students (who had taken it as an elective course and one of them had his own web page) and one 1st year female students (who had taken a private course). Database maintenance was not listed as a skill at all by any of the students' respondents. Moreover, one female respondent knew how to use MARC and one male illustrated that he has joined blogs and forums. Additionally, one respondent commented:

> *I suggest that the DLIS gives us more compulsory courses in ICT taught in both cohorts the males and the females. My brother and I are studying in the same department but are taught different ICT skills.*

In summary, the respondents have clearly stated their reasons of the inappropriateness of the ICT courses. This was due to teaching more theoretical than practical work; no unified courses' outlines; ICT skills needed by the market were not offered through

courses; courses did not complement one another; and some ICT courses were taught in one cohort but not the other. Nevertheless, the main problem behind this lies in the inconsistency of the curriculum.

5.6.2 ICT courses teaching and learning environments

The learning style or teaching methods adopted affects the teaching and learning of ICT skills a great deal. During the interviews only the teaching staff were asked regarding the methods used in instructing the courses. According to their views the methods that they used in instructing their LIS courses were the following:

- lectures using the blackboard, Power point, projector, data show and demonstrations;
- field visits to information centres and to private sectors;
- working in groups using the laboratories' facilities;
- handing in assignments electronically;
- short tests;
- in-class work such as online database searching;
- using websites and different information resources on the net such as searching subject databases;
- assigning students' practical exercises, research, presentations and group works.

The teaching staff were also asked if they preferred to instruct the ICT courses using other effective ways such as one to one, online, intensive ICT course and self-study. They had different views regarding this. Some rejected online courses due to the students' low ICT level, the unavailability of tools, and teachers preferred the availability of students during lecturing. They suggested having the following methods, which were not practised at the DLIS:

- intensive ICT course with the availability of a teacher assistant was viewed as the best way to "*assist in instructing those who need help continuously and those with poor ICT skills*";
- "*inviting guest speakers and ICT experts to give lectures and motivate students to recognise the importance of these skills*";

- "*open classes it gives better opportunities to learn specially in ICT, where you have to learn all what's new, there are more readings, it's like marketing the subject to students. They get to share what they learn*";
- "*one-to-one because we have students coming with different levels of ICT educational backgrounds*" and to "*ensure instructions are well delivered*";
- applying self-study to advanced levels of ICT courses.

Although the majority of the respondents recommended the previous methods, others thought that:

> *All of these methods have been tested and practised and are successful to use, but the teaching staff gets to choose what best suits students so that the course's objectives are delivered.*
>
> *All of these methods are good and have been successful but they need time to get approved.*
>
> *All of these are preferred, but it's good to give students the chance to choose the way they prefer.*

While different methods were used to teach LIS courses, mentioned above, the department still needs to support new methods to teach the ICT courses. This needs approval and it depends on the teaching staff and the students to choose what they prefer.

5.6.3 Curriculum updating

In updating the current LIS curriculum the employers' respondents clarified that "*the curriculum needs to be revised according to the needs of the job market*" (Public sector). It "*needs to be developed, revised and maybe changed, they (the DLIS) need to know the needs of the job market to introduce new courses*". In addition, an employer respondent and a previous alumnus said:

> *I was surprised that they are still teaching what we have learned maybe ten years ago or more. They (students) should be more knowledgeable in technology.* (Public sector)

The teaching staff perception regarding the updating of the curriculum was also positive. They considered it crucial to develop the eight block ICT courses that were already there and maybe add new courses to this block. Unfortunately they thought that the department was not regularly updating and revising the curriculum "*there is no policy to do it*", "*there are no procedures to ensure this*" and this was only done according to the personal efforts of the teaching staff.

Both of the respondents, employers and teaching staff, thought that there was a need to update the curriculum, since no modification was made to include new ICT courses. The teaching staff also considered it crucial to do this according to a well developed policy and procedures.

5.6.4 Professional organisations standards

The teaching staff were asked whether professional organisations standards were adopted to improve the ICT courses. They all affirmed that no standards or guidelines have been adopted to develop the ICT courses. They were aware of them but thought that the "*standards and guidelines need to be adopted and modified to suit our situation*" and it "*depends on the teaching staff personal efforts to adopt them or not*". In addition they thought that "*in Kuwait we have one LIS professional organisation which has not yet adopted any guidelines or standards*". The following quotation sums up their responses:

> *The only LIS professional organisation in Kuwait is still new and has not set any standards or guidelines. International LIS guidelines need to be adopted and modified to suit our local teaching circumstances. In general, this depends on the teaching staff experiences and views.*

Although the adoption of professional standards or guidelines was recognised to be important by the teaching staff, these were not consulted to shape the context of the ICT courses.

5.6.5 Collaboration in curriculum design/implementation and in training

Collaboration in curriculum design and implementation is a good way to enhance the curriculum and to know employers' needs, but it was not practised between the DLIS and employers. Collaboration with employers was done "*as the programme started*

years ago and there are unofficial personal efforts and communications to enrich and modify the courses, but unfortunately there has been no new courses added for years", as stated by teaching staff.

The teaching staff assumed that collaboration with employers was not made officially and regularly. Furthermore, there was no "*collaboration or planning between the department and the employers to meet the needs of the job market*". However, collaboration was done only to exchange teaching staff for lecturing some of the LIS courses to overcome the problem of their lack that the department was facing. Some kind of unofficial collaboration is done also with other organisations to discuss general LIS issues, appointing teaching staff, and updating courses outlines.

Moreover, collaboration within the department was found to be difficult between the teaching staff, being in two separated locations. One respondent elaborated:

> *Collaboration is not even done within the department, between the male and female cohorts; there is no collaboration between them in courses design.*

Nevertheless, the teaching staff were trying to "*unify the courses and their outlines to have the same curriculum for both cohorts; males and females*". Yet there were some personal efforts from teaching staff to "*consult other teachers who teach the same course or the advanced level course of the same subject*".

The employers' responses agreed with the teaching staff opinion that there was no collaboration and if there was, it was done informally. Their responses were categorised into three different groups. The first group had collaboration with the DLIS but it was held informally, they commented:

> *Well, I've done consultation informally with the department but I've not seen any progress or results regarding it.* (Private sector)

> *We are consulted, but this is not done officially and the curriculum is not updated as often as it should be.* (Public sector)

The second group thought that collaboration among them and the DLIS will offer better training opportunities and planning in students' ICT skills improvement. They pointed out that they were not consulted in curriculum development but were cooperating in general training of students only, their examples included:

> *Not on curriculum development. Sometimes we're consulted in using and searching of some databases used in the libraries to provide training.* (Public sector)
>
> *No, but we should be consulted as we are training and then employing LIS graduates.* (Public sector)
>
> *No collaboration has been done, its better if we're asked to. This would help us in training students, letting the department know what our needs are, and what technology we are using.* (Private sector)

The last group, the private sector, had no collaboration with the DLIS at all and were not training students, but they said:

> *No, there never has been any collaboration but we wish we can do this so that we can know their needs (…). This might help in employing them (students) here.* (Private sector)
>
> *We're looking forward to collaborating. It would also help the DLIS to know our employment needs in terms of ICT skills or other job requirements.* (Private sector)
>
> *We would like to collaborate, we could train them (students), do workshops and we have very professional people.* (Private sector)

On the whole, the DLIS was collaborating with some of the interviewed organisations in general training of LIS students. There was no official and regular collaboration between the DLIS and employers in students' ICT skills training and in curriculum design and implementation to meet the needs of the job market. If this kind of collaboration is undertaken with concentration on ICT skills; students will have better training, employment opportunities and the DLIS will know the needs of the job market, especially those of the private sector.

5.7 Factors influencing ICT skills improvement

Different factors influenced the improvement of students' ICT skills. These factors may make students unwilling to improve their ICT skills or, on the contrary, it may sometimes make them insist on learning such skills. One of the employers' respondents said:

> *I don't think there are. I think there are factors that make them want to learn not the opposite. It influences them positively because there is encouragement from the family and maybe peer pressure that makes them want to learn these skills.* (Private sector)

However, respondents were asked about the factors that negatively influenced the improvement of the students' ICT skills. Responses on this theme have emerged factors that were classified as sub-themes such as lack of motivation, English language proficiency, lack of interest, gender, social, accessibility, technophobia, lack of time and resources.

5.7.1 Lack of motivation

Motivation, such as encouragement, was found to be very important pertaining to the improvement of students' ICT skills from the point of view of all respondents. Illustrative employers' responses were:

> *Students should be encouraged to improve their ICT skills.* (Public sector)

> *Encouraging them, they need to be encouraged. Employees who have these (ICT) skills are more needed now than ever and their salaries in the private sector are increasing because of these skills.* (Private sector)

The employers' responses also indicated who should encourage students to adopt ICT and eventually to improve their ICT skills. They suggested that encouragement from family, friends, and the DLIS would positively help to improve the students' ICT skills. They pointed out:

> *Encouragement from family, friends, and teachers are factors that help in ICT skills improvement*. (Public sector)

> *Students should be encouraged from teaching staff. They should encourage them to improve these skills for their career.* (Public sector)

Yet, "*non encouragement from family and LIS School to adopt ICT and improve their ICT skills*" (public sector) was found to be a factor negatively influencing some students from improving their ICT skills.

The teaching staff supported the employers' perception that students needed to be encouraged to improve their ICT skills. They stated that they were encouraging students to use ICT skills because "*it's vital for their studies, educational progress, and professional development*". Various ways they practised to motivate students were identified by them, such as:

- giving students extra credit, bonus, and even sweets;
- stressing the importance of ICT skills and using different ICT tools;
- advising students to improve their ICT skills on their own;
- giving students "*continuous exams, homework, and asking them to send their assignments electronically*".

These methods were used to encourage students who took the ICT courses, students at their second year and beyond. Thus, the 1st year students were not encouraged by the teaching staff instructing the ICT courses because they were not required to take the these course in their first year. Moreover, a teaching staff respondent negatively, pointing out that:

> *Yes, I do encourage them but if more tools were available, laboratories well equipped to suit student numbers and needs, students were meeting the deadlines of handing in their assignments, and being punctual. This would encourage us to motivate them; we are not finding this at the department.*

According to the students' responses; some of the 1st year students felt that they already had encouragement from their families and teachers (of non ICT courses) to use the computer, since everything is taught through it. However, some other students were not encouraged and thought that the DLIS should motivate them to use their ICT skills, some examples are:

> *Technology is changing and I think the department should change to adopt with all sorts of it to motivate us and prove its importance to our career. This is what I have not yet seen and I consider it a problem.* (Male student)

> *Being illiterate in these skills is a factor, we should be encouraged enough to improve our skills.* (Male student)

On the other hand, the 4th year students were disappointed about this factor. None of them mentioned any encouragement from the teaching staff, contradicting the earlier teaching staff view, and two female students added:

> *Some teachers do not encourage us to use technology and some others skip lessons due to their absence.*

> *No encouragement from teaching staff especially those instructing traditional courses.*

Motivation was stressed to be important to develop students' ICT skills. Students were not encouraged enough to improve their ICT skills, as perceived by employers and students, this has negatively affected their ICT skills improvement and learning. In addition, the DLIS was not found to be a suitable environment to motivate both the teaching staff and the students.

5.7.2 English language proficiency

English language was another factor affecting students' ability to improve their ICT skills. Out of the 26 employees that responded 18 (69%) thought English was a factor that influenced students' ICT skills learning in different ways. For example it affected them from improving and learning their ICT skills, employers illustrated:

> *Students lack English language which is necessary to use and improve their ICT skills.* (Public sector)

> *Not having enough English language terms to use, this makes them not interested to improve their skills.* (Public sector)

Employers were also able to identify in which exact ICT skills having poor English affects. For example, searching information through the internet and through databases. As the respondents pointed out:

> *English, they need to know English to use and improve their ICT skills. This will also help them in searching and selecting the needed information.* (Public sector)

> *Some do not know how to search databases or not even the internet due to their poor English. They get stuck trying to move from one search to the other.* (Public sector)

The employers' respondents were aware that the language of instruction at the DLIS was Arabic, but they recommended teaching in English as well. That was because "*language is a big barrier even though a lot of library systems, search engines, and databases are available in Arabic*". English is "*still being depended on and widely used for training*" (Public sector). Respondents added:

> *Students say that they have been trained to use Arabic library systems and that they cannot use English ones. It's ok to train them in Arabic, but let them learn using English terminology so they can easily adopt to use English versions of systems and databases.* (Public sector)

> *They lack English language terminology to practise searching skills. Although there are a lot of databases and search engines in Arabic, but still the original is in English.* (Public sector)

Furthermore, the lack of English affected students from learning other skills such as communicating, problem solving, and analytical thinking. This was illustrated in the following examples:

> *English, they come with none and the first thing we ask them about when they come for employment is their English language. They are unable to solve problems because of their poor English.* (Private sector)

> *They have very basic ICT skills with English language problems. This even makes them unable to communicate since our library systems are English versions and our users need English information and resources.* (Private sector)

> *They lack analytical thinking which makes them not able to apply what they know to other databases or library systems because of their poor English.* (Public sector)

English was also a barrier, causing a lack of collaboration between the DLIS and private sector. As one respondent elaborated:

> *No, there is no collaboration and I think this is because of the poor language capabilities their graduates have.* (Private sector)

The teaching staff agreed with the employers' perception that students lacked English language skills this was due to the students' background education. They found it to be a barrier affecting the learning of ICT skills.

The students had poor English, being their second language, as stated above from the employers' and teaching staff views. Supporting this two of the 1st year students had stated that poor English is the only barrier they were facing to improve their ICT skills. Moreover, three other 4th year students supported this view and pointed out some problems caused due to the lack of English, they illustrated:

> *I think English language is a barrier to learn ICT skills, if English ICT terminology is instructed on a course this would make us capable of practising and improving our ICT skills even on our own.*
>
> *I think we should have enough English terminology to search professionally and in the right way.*
>
> *English is my only problem I cannot communicate using the internet facilities.*

The lack of English language affected students from improving their ICT skills, using library systems, searching databases, communicating (using ICT terminology), and solving problems. It also caused non-collaboration with the private sector.

5.7.3 Lack of interest

The employers' respondents, public and private, made their perceptions very clear in regard to the interest factor. Some thought that there were no other factors that

affected the students' ICT skills improvement; it was only the students' interest that counted. Some also thought that as long as a student has the interest he will improve his skills, they commented:

> *No factors affect as long as the student has the desire to learn and if prepared to accept the challenge, he will improve his skills and be creative.* (Public sector)

> *I think an LIS graduate need to be comfortable with the ICT environment to learn. He should be interested and talented. If you're interested you will learn and fit the environment surrounding you. So, if you choose LIS as a profession you should be interested in having these skills to cope with the environment.* (Private sector)

The teaching staff participants' responses regarding the students' interest supported the employers' previous view, an illustrative example was:

> *I usually give students the key skills to use ICT and they should work hard to improve them and only interested students will improve their skills.* (Male teaching both males and females)

Moreover, where as three students (two 1st year and one 4th year) believed that having the interest was a factor to improve their ICT skills, one (4th year) student felt that he was not interested because no one from home or at the DLIS School had encouraged him. In summary, the lack of interest affected the students' from improving their ICT skills. It was found that only interested students will improve their skills.

5.7.4 Gender

The gender issue did not any more affect the learning and improvement of ICT skills to the same extent as it used to as was viewed by the employers, teaching staff and students. They did not mention gender as a factor. One teaching staff elaborated:

> *No factors, not at this time, because if a girl is not allowed at home to access the internet she can do it from a café or at College. Girls are now using the net more than boys because they stay at home more.* (Male teaching females)

It was only one female employer respondent that thought gender negatively affected females, she said:

> *I think that boys have more chances to improve their skills because they can access with no restrictions and without being watched, but girls may face family pressures sometimes.* (Private sector)

Supporting the previous statement only two females (one of the 1st year and one of the 4th year) thought that gender is a factor affecting their ICT skills improvement. They felt to be "*watched*" and there was some kind of "*control*" at home. Being a female prevented one of them to choose her work placement training place and she had to be trained in a non-automated library.

From most of the respondents' point of view the gender factor did not affect ICT skills improvement. However, the gender issue appeared to affect ICT skills improvement when it emerged through other sub-themes, discussed earlier. For example, the teaching of different ICT courses at the two male and female cohorts that resulted in having different ICT skills among students. Also, males were viewed to have better ICT skills than females by employers and teaching staff because of these courses and because of having better opportunities to practise their ICT skills.

5.7.5 Social factor

The social factor was mentioned by a few of the respondents, others thought it did not affect the improvement of students' ICT skills a lot. It was stressed by one employer, who thought that students need family trust to practice their ICT skills. Supporting this view, only one of the teaching staff respondents perceived that females were socially not allowed to search the internet. This influenced their ICT skills improvement. Two 1st year females' students also supported this as they pointed out that they were socially restricted by their families to search the internet until a certain age. Another female stated that having "*other commitments such as family*" hindered her ICT skills improvement. This raises the issue of gender again; females being socially forbidden to use the internet and therefore to improve their ICT skills.

5.7.6 Accessibility

According to the employers' respondents, the possession of a computer and internet access was not a factor that affected ICT skills improvement. Therefore, the majority of them thought that "*every house has a computer now*", they argued that students "have access on their mobiles they are able to improve their skills anywhere and at anytime" and that access was not a factor to hinder the improvement of ICT skills, they added:

> *Nothing now can stop them from learning and improving their skills!! They have access everywhere even on their mobiles.* (Private sector)

> *I don't think anything impedes their progress now because every house has a computer now and access is everywhere.* (Public sector)

Only one employer respondent thought that "*some do not have accessibility at home and are not encouraged to use ICT*" (Public sector). The female cohort teaching staff opinion supported this view; they found that not having access to a computer as a factor that affected the improvement of female students' ICT skills, as one respondent illustrated:

> *50% of the students I'm teaching do not have computers at home.* (Female teaching only females)

The gender factor emerged again here, as mentioned earlier; some females have no access to ICT resulting in having poor skills.

5.7.7 Technophobia

Some students were found to have fear of technology. Fear is sometimes related to the lack of ICT skills. Two teaching staff stated that some students were afraid to approach technology. Employers agreed with this view, one respondent said:

> *Let them learn from their own mistakes they shouldn't be afraid of technology.* (Public sector)

Fear was also related to their ICT skills training, being dependent on learning these skills and not being encouraged. Illustrative examples are:

> *LIS graduates still have a fear of technology; some do not want to use the library systems they prefer to work manually. I think this is because of their poor training during LIS schooling.* (Public sector)

> *They cannot deal with technology, they fear trying anything new and they are very dependent in learning.* (Public sector)

> *Students are afraid to use technology. One student told me "I will ruin this" they need to be encouraged to learn.* (Public sector)

Technophobia hindered the improvement of students' ICT skills. It was related to their lack of ICT skills, not being able to use technology, being dependent in learning, and not being encouraged.

5.7.8 Lack of time

The restricted ICT laboratory opening hours was a factor that hindered the improvement of students' ICT skills, as was perceived by one of the employers who also teaches at the DLIS. The teaching staff supported this view they thought that the non-management of time, was another barrier to ICT skills improvement, illustrative responses were:

> *The students face the non-management of time to learn and improve these skills.* (Male teaching males)

> *Students have no time to practise their ICT skills because they have a lot of reading and assignments to do.* (Male teaching females)

Students' respondents, supporting the previous employers and teaching staff views, recognised time as a constraint affecting their ICT skills improvement. They stated that they did not have time to study and to practise their ICT skills. One student respondent also mentioned that they were not "*getting enough training because teaching staff are always complaining of time shortage*".

The lack of time factor included; the restricted ICT laboratory opening hours and lack of time management of students and teaching staff that affected ICT skills improvement.

5.7.9 Resources and facilities

The unavailability of resources and facilities causes great hindrance to the improvement of students' ICT skills. One student respondent commented that "*having the facilities, hardware, and software at the College is essential to improve ICT skills*"; while another student thought that "*there are limited subscriptions to use some programmes and software to improve our skills at the department*". One of the 1st year respondents said:

> *When I came to LIS School I thought I will see everything computerised such as teaching methods, the classrooms and the library. It was the opposite of my expectations.*

Employers' respondents also mentioned that "*training tools such as software and hardware should be accessible to students for training*", they stated:

> *I think that students should be trained at DLIS using the latest technology and tools.* (Private sector)

> *The systems and databases we have here are very advanced, which do not suit their ICT level as beginners. I think these kinds of systems should be provided for them at college to be trained on.* (Public sector)

The teaching staff view on the availability of resources and facilities at the DLIS were split into two. The first view was that everything was there but it was not used "*efficiently and professionally, in the right way*" by the teaching staff and students. They did not have enough skills to use such facilities. Meanwhile, the other view was that the DLIS had a shortage in all of the following:

- no wireless;
- low connectivity;
- in house maintenance and technical support is infrequently available;
- lack of regular financial support from the department;
- procedures are very hard and very slow in getting hardware and software;
- not enough laboratories to meet the number of students;
- ICT laboratories opening hours are inadequate, discussed in section 5.7.8;
- limited access to databases.

Moreover, it was pointed out that the "*big number of students admitted to the programme every semester, doesn't fit the department's capacitie*s". Also, the teaching staff commented that technical support should be available to maintain the tools, an illustrative examples was:

> *The basic needs are there, but providing ICT hardware and software needs continuous support and development so it can suit the level of the programme and its graduates.*

The respondents indicated that there was a lack of a number of resources and facilities. In addition, it was stated that both teaching staff and students lacked the ICT skills to use these resources. This has hindered the students' ICT skills improvement.

5.8 ICT skills and the needs of the job market

This theme includes sub-themes such as the students' ICT skills meeting the Kuwaiti needs of the job market, other ICT skills, and other non-ICT skills needed by this market and the private sector.

5.8.1 ICT skills meeting the needs of the job market

The ICT skills defined were all stated to be "*very much*" and "*a lot needed*" by the Kuwaiti market as perceived by 15, out of sixteen, of the students' respondents. They justified their responses with the following:

> *All sectors demand them and are depending on technology and computerisation. Nothing is done manually now.* (1st year female)

> *Every organisation now has an in-house database to manage its work.* (4th year male)

Employers also supported the students' view and expected LIS graduates to have more ICT skills than what they usually came with. They expected them to "*have at least good knowledge of the skills mentioned in the definition*". They even expected "*them to be competent in their field*", to have "*more than this, if graduates had all these skills this would serve our needs*" and students would then be employed as "*information specialists*".

The interviewed employers were precise in the ICT skills that they wanted graduates to have such as "*using library systems especially those that are widely used in Kuwait*", searching information, navigating and using advance searches on the internet, using the internet as a communication tool, knowing the automated procedures in the library, and using databases. They expected LIS graduates skills to be better than their own skills as two respondents confirmed:

> *I would expect a lot more. I would expect them to know better than me, to know the latest technologies.* (Private sector)
>
> *I expect them to have better skills than mine.* (Public sector)

The majority of the teaching staff had the same opinion as that of the employers. They considered that the current students' ICT skills were not satisfying the needs of the job market. They pointed out that graduates should have all the ICT skills mentioned in the definition, "*maybe more to satisfy the needs of the job market*" and they wished to change the curriculum to "*deliver the ICT courses according to their (the employers) needs*". Therefore, they thought that graduates will be "*meeting the needs of the job market if they will be employed in school and public libraries but not in other organisations*". However, one respondent added:

> *According to the currently needed ICT skills maybe it's enough, but because of the pressure that the department is going through in accepting large numbers of students every semester that overweighs its potential and teaching capacity, employers should not expect more. They shouldn't expect students to be information specialists as they graduate because employers should improve these skills in a way to suit the needs and requirements of the workplace.* (Male teaching males)

To sum up this sub-theme, the current LIS students' ICT skills were not satisfying the needs of the job market. Moreover, it raises the issue that although the graduates of the DLIS are mainly educated to work in public and school libraries, the DLIS should take into consideration the needs of other employment organisations since it is the only Bachelor LIS programme in Kuwait.

5.8.2 Other ICT skills needed

This sub-theme included the other ICT skills that were needed by the Kuwaiti job market but were not included in the ICT definition. Employers' respondents pointed out that students need to practise their ICT skills to be "*problem solvers, so they can solve any technological problem they face*" (Public sector). They also suggested that students should have knowledge of the following ICT skills:

> *In addition to these ICT skills they need to be aware and educate them selves on whatever is new on the web such as web 2.0 and now 3.0 is starting to be used. They need to have familiarity with the use of all technology. Using and locating metadata is also recommended.* (Private sector)

> *We employ information professionals with all of these skills, in addition to knowledge of MARC 21 and AACR2 cataloguing standards.* (Private sector)

Additionally, employers required LIS graduates to be "*updated with the latest technology in their fiel*d". They wanted graduates to show them "*new ICT skills, things we (as students) did not learn during (their) LIS studies*". Overall, employers thought that the students were also required to possess the previous ICT skills.

5.8.3 Other non-ICT needed skills

Although ICT skills were the most essential skills to have, employers suggested that LIS graduates should have other skills. They recommended that LIS graduates should have analytical thinking skills (such as applying what they already know to other databases and library systems), human soft skills (such as management skills and communication skills) and attitudes skills (such as using their initiative, being responsible, and approachable). The following were some illustrative examples:

> *I would like to see the DLIS graduates with better ICT skills; maybe with management skills and communication skills because they will be dealing with users. This is what a LIS graduate needs to possess in addition to ICT skills.* (Public sector)

> *Students should adhere to the willingness to work and have responsibility, they should be taught the code of ethics. I think these skills are important to have in addition to ICT skills.* (Public sector)

> *Personality skills such as being approachable and having initiative, affects learning other skills. I think it's a combination of skills and a person that makes a good librarian.* (Private sector)

> *They lack analytical thinking; I mean solving problems they encounter and developing understanding of what they are working with. I think the way they think needs to be changed.* (Private sector)

The teaching staff (supported the employers' view) also believed that LIS students should possess other skills in addition to ICT skills, such as:

- Communication skills, "*knowing how to deal with users and being approachable.* To be able to "*use and deliver their ICT skills to others at their workplace and through their daily life*";
- "*teamwork where students can encourage, challenge and learn from one another and develop other skills*";
- problem solving.

Both of the respondents, employers and teaching staff, thought that graduates should have ICT skills in addition to other skills they have suggested.

5.8.4 Private sector

The private sector is known to be another employment sector for LIS graduates in Kuwait. Graduates are not applying for this sector for different reasons. From the private sectors' employers perspective the following were some reasons:

> *LIS graduates are not coming to the private sector because of less payment and more working hours, I think something needs to be done.* (Private school)

> *Students showed no interest in training and being employed in our organisation, being private sector. I think this is because they wanted to work in public school libraries where there is more pay and less working hours.* (Private library)

Since, this sector was using and providing the latest technology and it was used in its different daily procedures, the private sector respondents thought that "*students should be encouraged to be trained in different private sectors organisations, so that*

they can learn different and new ICT skills". Moreover, LIS graduates need "*to know that they need all of these skills to be employed in the private sector where salaries are given according to the skills an employee has*". Some respondents added:

> *They lack most of these skills, which are the basic requirements of the library's operations, users' services and employers' needs in the private sector.* (Private sector)

> *I don't think they will be able to search for the needed information because they are not trained to do this. That is why we usually employ subject specialist librarians and LIS graduates are not capable of performing this.* (Private sector)

There is no doubt that the private sector in Kuwait has the capabilities to train LIS students. The DLIS should target this sector to ensure that graduates are fully prepared to work in it. The DLIS also needs to encourage students to be trained in the private sector in which better chances of employment and salaries, in some, are available.

5.9 Other issues

There were other issues that arose such as the ICT courses teaching staff, the non-ICT courses taught, including the ICDL as a requirement of employment, the view of the profession, the department name change and ICT skills improvement.

5.9.1 ICT teaching staff

The ICT courses teaching staff at the DLIS are PhD and MLIS holders. They are graduates of American universities, British universities, and Kuwait University (Appendix 14). Some of the teaching staff, as viewed by employers, were not updating their ICT skills and even lacked ICT skills. Comments referring to these were:

> *Teaching staff should update their own ICT skills, show their importance and encourage students to use ICT to improve their skills.* (Public sector)

> *Teachers too should be exposed to all sort of new library technology.* (Private sector)

Although PAAET offered free of charge local and abroad courses to its teaching staff, they were not required to take them and they stated that "*there is no follow up on this, but they are required for getting promoted to higher teaching degrees*". However, the teaching staff responses conflicted with the employers' previous responses. They all affirmed that they were regularly updating their ICT skills, except for one who honestly said:

> *I'm really lazy in updating my skills regularly.*

Another issue that concerned the employers was that "*some LIS teaching staff lack ICT skills themselves and therefore cannot train students"*. The teaching staff respondents supported this view they thought that some of their colleagues "*are not qualified to train students; they do not have enough ICT skills themselves*". They argued that this was due to the following barriers:

- the teaching staff needs to " *be presented to what is new, new trends in ICT*";
- there are "*time restrictions and teaching duties that sometimes prevents us from updating our skills*";
- "*there are no local distinctive ICT courses that would add something new to our ICT knowledge or skills*".

The 1st year students did not have a clear view of the teaching staff ability in teaching ICT courses nor their skills, since they have not taken the courses. Nevertheless, the 4th year students supported the employers' and the teaching staff view. They stated that "*some of the teaching staff does not have enough ICT knowledge*", their skills needs to be updated" and "*some seem to not know what's new in using technology*". Students were also able to recognise that the ICT skills training differed among teachers for not all of them were "*skilful*" in teaching ICT courses.

The teaching staff respondents also had some concerns regarding the practical training teachers[10], or assistant teaching staff. They characterised them as not having ICT skills and the experience to work, illustrative comments were:

[10] Teachers employed at DLIS for training students on the practical aspects of the LIS courses, training students during the work placement course, teaching some theoretical courses and supervising students.

> *Practical training teachers do not have ICT skills and are not punctual in training or in opening the laboratories for training.*
>
> *Teaching staff's assistants that train students are not very qualified in these skills; they have no expertise and no motivation to work.*
>
> *There is also no evaluation for the teachers of practical training to assess their level of teaching and training.*

Generally, the teaching staff ICT skills were not updated and some were not qualified to teach and train students. Moreover, the issue of the practical training teachers who were training, supervising, and teaching LIS students without having the expertise and skills to do so was a very serious concern that would deter the improvement of students' ICT skills. This is a very serious problem to consider, because without qualified teaching staff, ICT skills improvement will not be achievable. This also raises the issue whether or not the teaching staff and the practical training teachers were taking regular courses in order to improve their ICT skills to be skilled in the latest advances of the technology.

5.9.2 Non-ICT courses

These are traditional LIS courses that do not instruct or require the use of ICT into their curriculum. The employers and the teaching staff respondents affirmed the need to incorporate the use of ICT into these courses, they commented:

> *If ICT was included in to all LIS courses this would give us an information specialist.* (Public sector)
>
> *I recommend ICT courses revision and concentration on ICT skills in all LIS courses.* (Private sector)
>
> *They should be given more assignments to improve their ICT skills even through non ICT courses such as making them use emails and word processing.* (Teaching staff)

According to the students' views, the 1st year students pointed out that it was obvious from the course outlines that most of the courses were theoretical LIS traditional courses and that there were only few ICT courses. Another student added that ICT

was used in very few traditional courses and some teachers did not even assign students to use a word processor, one respondent elaborated:

> *Most of the courses are traditional. As a first year student I'm not required to use the computer at all up till now.*

The 4th year students also thought that ICT was not included in all the LIS courses "*not even half of them integrate ICT*". One respondent added that it "*depends on the teacher; some teachers find it hard to use technology*".

The students were asked if the non-ICT courses required them to use ICT and therefore practise their ICT skills. The 1st year students mentioned that some of the courses did ask them to use ICT, while the 4th year students thought that "*less than 50% of the non ICT courses use ICT for assignments and require us to send them electronically*". They also suggested that all the courses should require them to hand in their assignments electronically. Moreover, a 4th year respondent thought that the teaching staff "*should improve their ICT skills especially those teaching traditional courses*". Also one teaching staff supported this view and thought that some of his colleagues "*do not know how to use a computer they should have ICT skills even if they are not teaching them*".

All three respondents (employers, teaching staff and students) thought that ICT skills were not incorporated into non-ICT courses. However, the teaching staff and students considered that all teaching staff should possess ICT skills even if they were not instructing ICT courses.

5.9.3 ICDL

Employment organisations in Kuwait are moving towards the full implementation of the ICDL, with the aim of increasing ICT skills among their employees. All the public sector respondents confirmed the need of the ICDL as a pre-employment qualification, since it has been a requirement in these organisations. Some even suggested the ICDL to be an entry requirement of LIS students' admissions. One respondent said:

> *I think having the ICDL should be encouraged among students as an entry level so we can have information specialists.* (Public sector)

Nevertheless, PAAET, being a public organisation in Kuwait, is requiring all its employees to take the ICDL as a qualification. This was frequently repeated by teaching staff respondents, as one said:

> *PAAET is now forcing its teaching staff to take ICDL and is requiring it as an employment qualification. This shows their concern in raising the ICT level of their employees.*

Some students' respondents, supporting the employers' and teaching staff views, revealed that the ICDL has become an employment requirement in Kuwaiti organisations now and some graduates are even taking the qualification to get employed. The ICDL qualification, in the future, will help to solve the issue of some teaching staff and students having poor ICT skills, as was suggested earlier by respondents.

5.9.4 View of the profession

Employers and students believed that the job title of a librarian should be changed so that the public view of the status of a librarian is then changed. Eventually LIS graduates will then be employed in other non library fields belonging to the wider information areas. Employers' respondents were eager to change the public view of a "*librarian*". The students were also aware that the job title as a "*librarian*" was hindering their employment opportunities in non library jobs. From the perspective of the employers and the students this also affected the students' view of the profession, some examples were:

> *Students' view of the librarian working in the traditional library needs to be changed and replaced by the information specialist working and dealing with different ICT instead.* (Public sector)

> *Students do not have ambitions to practise or learn these skills. They view the profession as something with no future due to the bad situation of public and school libraries in Kuwait being not automated. They need to have the challenge and interest.* (Public sector)

> *Changing the job title from librarian to information specialist would help us a lot in having better job opportunities to work in other places rather than the traditional library.* (1st year student)

The employers' respondents also thought that LIS students and the public should be educated about the profession, they pointed out:

> *The public should be educated about the profession "what a librarian is" "what is the profession" and students should know this before they start their LIS schooling. They should be encouraged to work as information specialists.* (Private sector)

> *Some people's view of a librarian is still associated with books and the library and not with information or skills he could have. This can be a factor not to encourage students to improve their ICT skills.* (Public sector)

This raises the issue that the Kuwaiti public should be educated through lectures and sessions on the different duties of the librarian. Entry-level students should also be aware of the profession and the different skills of a LIS graduate. This would also encourage them to pursue LIS as a career.

5.9.5 Name change

The teaching staff were asked about changing the name of the programme from LIS to *Information Science* or *Information Studies* they had different opinions regarding this. Those who agreed to the name change thought that it would change the courses offered, the view of the profession and level of students admitted to the programme. They also pointed out that "*this is the trend and this is what happening elsewhere but it needs careful planning, choice of courses, and lots of effort*".

Other respondents who disapproved the name change agreed on "*offering new ICT courses related to the library setting and improving the ones that are already there*". One respondent added:

> *Changing the department's name will not necessary change courses offered, but if it is adopted the department will definitely work towards offering new ICT courses.*

Another respondent thought that the "*term library still needs to be there because of the traditional courses being taught*". Moreover, the term is "*part of the field and the main employers of our graduates are schools and public libraries*". Another illustrative example is:

> *I think it eventually would, but I don't think it's a good idea because we mainly educate future school and public librarians. Information science is a bit of an exaggeration for this level.*

In summary, most of the respondents disapproved the name change without the change of the programme's courses offered.

5.10 ICT skills improvement

The respondents were asked to recommend ways to improve the students' ICT skills. Employers seemed to have knowledge of the approaches that could be made to train and improve students' ICT skills, since they have been training LIS students. They have suggested the addition of additional ICT courses to the curriculum. The following are some illustrative examples:

> *Intensive ICT courses that would have training workshops.* (Public sector)

> *More ICT courses should be added to the curriculum that provide intensive student training.* (Public sector)

They also added that "*ICT courses should have more practise and training*" (Public sector) and there should be "*more specialised teaching staff to teach these courses*". Moreover, students should "*work harder on their ICT skills by giving them more activities to do*" (Private sector). They should "*be given more assignments to use ICT and to spend more time to practise their ICT skills using the laboratory facilities*" (Public sector). Another way to improve students' ICT skills was through the traditional way of reading as one respondent said:

> *Students should not depend on what they are learning only. Skills are not only taught at school they should be practised to enhance them and be creative using them. Students should read and update themselves to whatever is new, whether its ICT skills or any other skills.* (Private sector)

Moreover, one respondent recommended "*a one year foundation course on ICT skills before starting LIS courses with concentration on English*". Another respondent recommended that an "*Arabic online searching database is needed so they can learn searching skills in their own language first and then apply it in English*".

Employers also suggested that ICT skills training should be done in both languages Arabic and English. They even suggested adding English, or intensive English, to the LIS curriculum because the "*ICT courses are taught in Arabic and there is no use or much training in English*". The gap lays in "*learning these skills in good English*" and by instructing the ICT courses in English. Trying to overcome this factor the department has started, in 2006, instructing an ICT course in English. In addition, the employers' respondents recommended:

> *We give them projects to do and they want them in Arabic because they do not know English. (…) I think the gap is in their lack of English. Learning ICT skills should be instructed in English (…). I recommend English courses to be added to the instruction of ICT courses.* (Public sector)

> *Students come with very basic ICT skills in Arabic and even less in English. Training them should be intensively and in both languages.* (Public sector)

> *Arabic cataloguing and classification should be stressed and practiced because Arabic has its own databases and systems.* (Private sector)

> *New technologies, whatever is new should be instructed. Language problems should be addressed, why not instruct them in English or make it an entry level requirement.* (Private sector)

The employers' respondents specified the kind of training that was needed in some skills such as electronic cataloguing and classification, searching and retrieving information and using library automated systems, they stated:

> *Students should have a minor specialisation in ICT skills such as cataloguing or database searching where a student gets the chance to choose what he prefers to learn.* (Private sector)

> *Students should be trained on library automated systems that are used in Kuwaiti libraries and information centres because this is where they will be employed.* (Public sector)

Moreover, two employers' respondents suggested that students should choose their own way to improve their ICT skills, they said:

> *Maybe they should be asked to develop their own way of learning ICT skills. Get them to think creatively and encourage them to learn.* (Private sector)

> *Students should be asked how they want to improve their ICT skills and be given more assignments to improve them.* (Public sector)

In addition, one respondent suggested that students should choose the place of work placement training, he stated:

> *Students should choose where they want to be trained during work placement, so they can practise and improve their skills and maybe decide to be employed there later on.* (Public sector)

One more respondent went further to suggest that:

> *I would recommend that during work placement training a LIS student would get a diploma for the training he takes and in the specialised area he prefers. This could be done in the most advanced technological organisations in the country*. (Private sector)

The teaching staff suggested adding a variety of ICT courses and they were aware which precise courses were needed. Such as adding a comprehensive or intensive ICT course, introduction to computer networking, library automation, web page design (as a stand alone course), information searching, database design and development, ICT general course, internet applications, information analysis, and information retrieval. They also thought that some of these courses were already incorporated into the curriculum but "*it's their content that needs to be changed*" and "*they should have a clear policy and a definite outline for each course*". One respondent pointed out that these courses "*are taught within other courses and some*

are taught in the male cohort and not in the female", another respondent added that the "*students need to be trained more on these skills given the same opportunities of education*". Other teaching staff recommended giving students more assignments and quizzes.

The students' responses suggested various ways to improve their ICT skills, some examples were:

- Testing students' ICT skills before the entry level to improve them according to the needs of the job market. (1st year)
- ICT courses should be added starting from the first semester. (1st year)
- The Ministry of Education should add a comprehensive ICT course during students' previous education. (1st year)
- The need for more ICT courses, more training and more specialised teaching staff to teach these courses. (4th year)
- Providing self training programmes. (4th year)
- The ICT courses should be compulsory, instead of four electives. (4th year)
- "*Teaching staff at the DLIS should improve their ICT skills especially those teaching traditional courses*". (4th year)

The main three respondent groups presented various ways to improve students' ICT skills. These are all good means to improve the students' ICT skills, but as mentioned by one member of the teaching staff it is a combination of things that would improve ICT skills. It "*depends on the student's ICT skills level, his interest in the subject, the practise of these skills, and on the teacher instructing the subject*" to improve these skills. Another teaching staff respondent positively pointed out:

> *I'm very optimistic of the future because the Ministry of Education has added ICT courses starting from primary school and this gives better educational opportunities to students.*

5.11 Conclusion and main findings

The interviews' qualitative data were presented according to the themes and sub-themes that have emerged from it. The interviews were useful to gather different

perceptions on the research topic from the three different respondents: employers, teaching staff, and students. It has revealed useful information, suggestions, and recommendations to the improvement of students' ICT skills, training, curriculum, the needs of the job market, and the factors affecting ICT skills improvement negatively or positively. Other related issues were also presented to complement the main themes.

The main qualitative research findings suggested that "ICT skills", as a term, seemed to be new to most respondents; database maintenance and web page construction were not practised in some organisations and at the female cohort at the DLIS; students lacked some ICT skills, however males had a better ICT skills level than females; students did not gain ICT skills during their previous education nor was training enough through their LIS education; the duration of work placement training was not enough to gain ICT skills; students were trained with a very general work placement training plan. Moreover, the ICT courses taught were inappropriate; the department was using traditional methods of learning to teach ICT courses; the curriculum was outdated; guidelines and standards of professional associations were not consulted by the DLIS; and there was no collaboration with employers to meet their job requirements needs.

However, factors were found that negatively affected the students' ICT skills improvement such as lack of motivation, English language proficiency, lack of interest, gender, social factor, lack of accessibility, technophobia, and lack of time and access to resources and facilities. Furthermore, the current students' ICT skills did not satisfy the needs of the market; other ICT skills were also found to be defined by the job market; students should possess other skills needed by the job market in addition to ICT skills; students were not encouraged to be trained and employed in the private sector.

Other issues also emerged, such as: teaching staff ICT skills were not updated; ICT skills were not incorporated into non-ICT courses; the ICDL has become an employment requirement in Kuwaiti organisations; the public lacked the appreciation of the role of the librarian; respondents disapproved the department's name change.

The qualitative data added significant understanding on the students' ICT skills situation. The data collected through this method will be confirmed, supplemented, and supported by data collected via questionnaires (Chapter Six) and focus groups (Chapter Seven).

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Chapter Six: Quantitative Analysis of Questionnaires

6.1 Introduction

The questionnaire was selected as a method to collect in depth quantitative data from the students. The primary objective of the questionnaire was to identify the students' ICT skills level in an attempt to find out the relationship between their ICT skills level and other related variables such as gender and year of education.

6.2 Organisation of data

The questionnaire data was described and analysed under the following headings:

- Respondents' background.
- Students' ICT skills.
- Benefits of ICT skills.
- ICT skills training and the curriculum.
- Difficulties and factors influencing ICT skills improvement.
- ICT skills support and improvement for learning.

6.3 Respondents' background

The questionnaire respondents were male and female, 1st and 4th year students. In order to illustrate the distribution of respondents frequency tables (numbers and percentages) were used.

6.4 Distribution of respondents by gender

Table 6.1 shows that the proportion of responses from the students was not even; there were more females than males. This is due to the fact that the female population is more than male in Kuwait (Chapter Three, section 3.4 population) and the LIS is a field that is preferred by women (Moreiro, J.A. 2001, p.30), hence more female students were admitted to the programme. Accordingly, it was unsurprising that the female respondents (59%) were more than male (41%) and within the overall gender distribution at the DLIS during the academic year 2007-2008.

Table 6.1 Number of respondents according to their gender

Gender	*Frequency*	*Percentage*
Males	92	40.9
Females	133	59.1
Total	225	100.0

6.5 Distribution of respondents by year of study

There were 284 students registered at the DLIS, during the survey period. From this 79% students responded; 59% were from the 1st year and 41% were from the 4th year of their studies at the DLIS (Table 6.2).

Table 6.2 Number of respondents according to their year of study

Year	*Frequency*	*Percentage*
1st year	133	59.1
4th year	92	40.9
Total	225	100.0

The distribution of the students in the 1st year (59%) were more than the 4th year (41%), this could be due to drop-out or due to transfer from one programme to another. A chi-square test was used to determine if there were statistically significant differences in gender in terms of year of study. The results (chi-square = 0.870, df = 1, p = 0.351) showed that there was no statistically significant association between gender and year of study.

6.6 Distribution of respondents by educational background

The majority of the respondents (98%) went to public school (Table 6.3); the language of instruction at these schools was Arabic. Only 2% went to private schools, this is not surprising as private schools have higher tuition fees and also require students to have a higher standard of previous education. Graduates of private schools have better opportunities (due to their high grades, good qualifications, and proficiency in the English language) to join Kuwait University, private universities, or to study abroad. However, the two systems cater for students with a diverse level of qualifications (such as different skills and language proficiency) to help equip them

for their further education. It was intended to compare the ICT skills of students in the two systems, public and private, to find out if any significance differences existed between the two groups. However, only 2% of the students went to private schools, thus this was not possible.

Table 6.3 Number of respondents according to their educational background

Education	*Frequency*	*Percentage*
Public	221	98.2
Private	4	1.8
Total	225	100.0

6.7 Students' ICT Skills

The ICT skills were defined[11] in a covering letter of the questionnaire to familiarise the respondents with the term. These skills were included based on the literature and due to their importance in LIS programmes as the minimum skills an LIS student should possess. The ICT skills were then assessed throughout a number of questions indicating the respondents' ICT skills knowledge and level.

6.7.1 Learning ICT Use

The students were asked to indicate where they learned to use ICT equipment. They were given five choices: previous education, LIS School, on my own, friends, and private lessons. The largest group (40%) reported that they had learned to use ICT equipment from their previous education; 29% reported that they learned on their own and only 16% reported that they learned from LIS School. The responses regarding ICT learning are given in Table 6.4. Each respondent had the choice to tick each and every item in this question; therefore the number of responses (334) does not equal the sample size (225).

[11] The minimum ICT Skills that LIS students needs to access, evaluate, communicate information, and to produce documents electronically by the use of computers and communication technologies. These ICT skills include: Using office applications (Word, Excel, and others.); Using and managing library automated systems (acquisition, catalogues, circulation and current awareness); maintaining in-house databases; Designing and constructing web pages; databases, online and internet searching to retrieve information.

Table 6.4 Where learned to use ICT

Where learned to use ICT equipment?	Responses		
	N	Percent	% of Cases
Previous education	133	39.8	59.1
LIS school	53	15.9	23.6
On my own	97	29.0	43.1
Friends	41	12.3	18.2
Private lessons	10	3.0	4.4
Total	334	100.0	148.4

(*N* = 225, multiple response)

Cross-tabulation was performed to indicate where students learned ICT skills by gender and by year of study. In the 1st year 65% males and 70% females indicated that they learned from their "previous education"; 39% males and 43% learned on their "own" by trial and error; 28% males and 17% females learned from their "friends" and only a total of 9% males and females learned from "LIS school" (Table 6.5).

Table 6.5 Where learned to use ICT equipment/gender/year (Cross tabulation)

Where learned to use ICT?		*1st year*			*4th year*		
		M	F	Total	M	F	Total
Previous education	N	33	57	90	11	32	43
	% within gender	64.7	69.5	67.7	26.8	62.7	46.7
	% Total	24.8	42.9	67.7	12.0	34.8	46.7
LIS school	N	7	5	12	20	21	41
	% within gender	13.7	6.1	9.0	48.8	41.2	44.6
	% Total	5.3	3.8	9.0	21.7	22.8	44.6
On my own	N	20	35	55	22	20	42
	% within gender	39.2	42.7	41.4	53.7	39.2	45.7
	% Total	15.0	26.3	41.4	23.9	21.7	45.7
Friends	N	14	14	28	5	8	13
	% within gender	27.5	17.1	21.1	12.2	15.7	14.1
	% Total	10.5	10.5	21.1	5.4	8.7	14.1
Private lessons	N	3	3	6	4	0	4
	% within gender	5.9	3.7	4.5	9.8	.0	4.3
	% Total	2.3	2.3	4.	4.3	.0	4.3
Total	N	51	82	**133**	41	51	**92**
	% Total	38.3	61.7	100.0	44.6	55.4	100.0

Percentages and totals are based on respondents.

Both male and female students at the 4th year indicated that they learned to use ICT equipment from their "previous education" (47%), 63% females and only 27% males indicated this; and 46% (54% males and 39% females) indicated that they were learning on their "own". Since the 4th year students had already taken ICT courses, 45% (49% males and 41% females) indicated that they learnt through LIS School. The students indicated that they learned least from "friends" 14% and from "private lessons" 4%.

Students were asked about their experience in using ICT "on their own" or if they would "need assistance" and who they would ask for assistance if needed. The largest group (49%) of the 4th year students used ICT "on their own"; while the largest group (47%) of the 1st year students indicated that they "sometimes need assistance". However, only 13% of the 4th year students indicated that they "need assistance" and none of them "preferred not to ask" for assistance when needed, (Table 6.6). Although "friends", as previously mentioned, were not a source of learning (14%), most of the students (74%) preferred to ask their "friends" for assistance. Only 18% (13% from the 1st year and 26% from the 4th year) would ask their "teachers" for assistance, (Table 7).

Table 6.6 Use ICT on own or need assistance/Year of study (Cross tabulation)

Use ICT on own or need assistance?	**Year of study**					
	1st year	%	4th year	%	Total	%
On my own	42	31.6	45	48.9	87	38.7
Need assistance	23	17.3	12	13.0	35	15.6
Sometimes need assistance	62	46.6	35	38.0	97	43.1
Prefer not to ask	6	4.5	0	.0	6	2.7
Total	133	100.0	92	100.0	225	100.0

Table 6.7 Ask who for assistance/Year of study (Cross tabulation)

Ask who for assistance?	**Year of study**					
	1st year	%	4th year	%	Total	%
Friends	106	79.7	60	65.2	166	73.8
Teachers	17	12.8	24	26.1	41	18.2
Prefer not to ask	10	7.5	8	8.7	18	8.0
Total	133	100.0	92	100.9	225	100.0

6.7.2 Frequency of ICT use

On the whole, the majority (64%) of the students were using ICT equipment "daily" or "weekly" to perform different activities; only 6% were using the equipment "monthly", and 30% were "only when assigned to", (Figure 6.1).

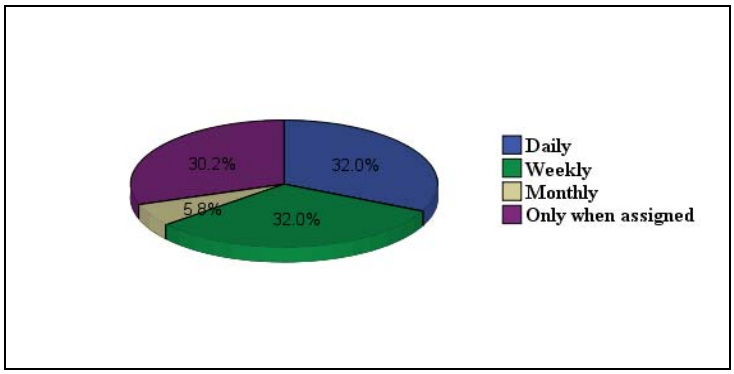


Figure 6.1 Use of ICT equipment by students

In terms of frequency "how often" respondents were using ICT equipment varied according to their year of study. Although the differences in percentages between the two years were small, the 4th year students were using ICT equipment on "daily" (38%) basis more than the 1st year students (28%). On the other hand the 1st year (33%) students were using them more than the 4th year (26%) students when they were "assigned to", (Figure 6.2). Chi-square was used to determine if there were statistical significance differences between the two variables, "how often" used and year of study. The results (chi-square = 3.21, df = 3, p = 0.359) showed that there was no statistically significant association between the use and year of study.

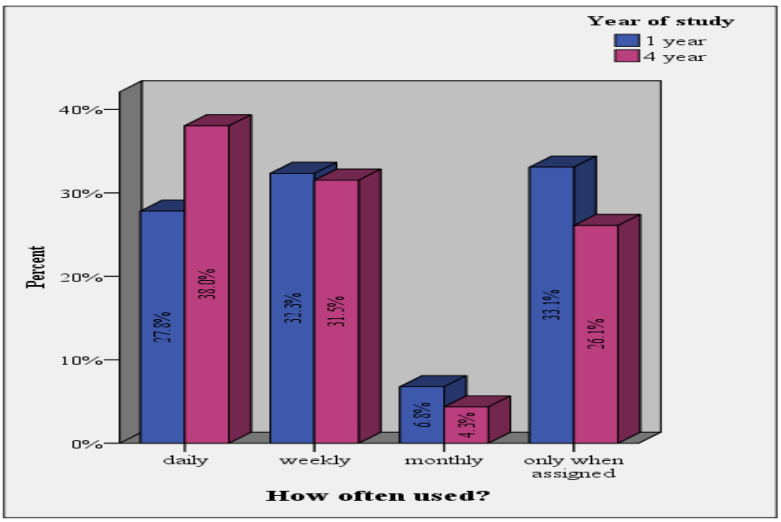


Figure 6.2 Use of ICT equipment by year of study

Figure 6.3 represents the use of ICT equipment by gender. It is apparent that the male students used ICT equipment more often on "daily" basis than the females. Chi-square was used to determine if there were statistical significance differences between the two variables, use of ICT equipment, and gender. The results (chi-square = 10.11, df = 3, p = 0.018) showed that there was statistically significant association between ICT use and gender, indicating a positive relationship between the two variables. It implies that the use of ICT equipment and gender had an apparent association.

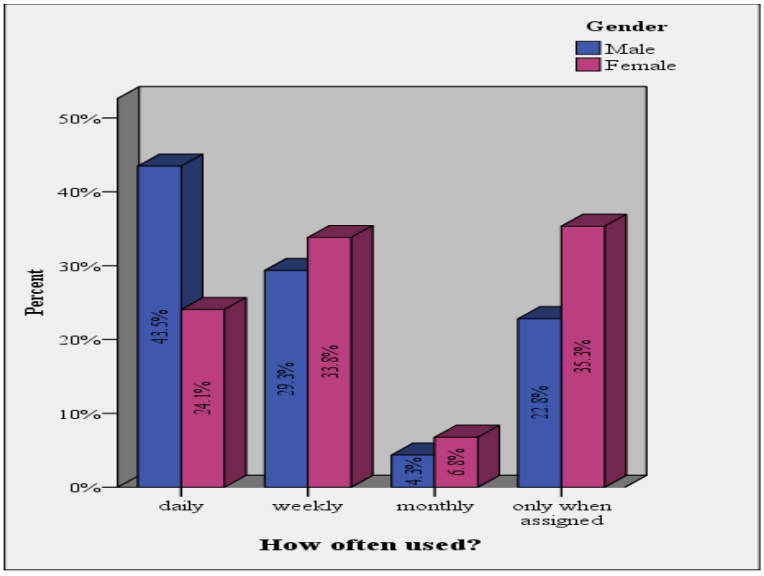
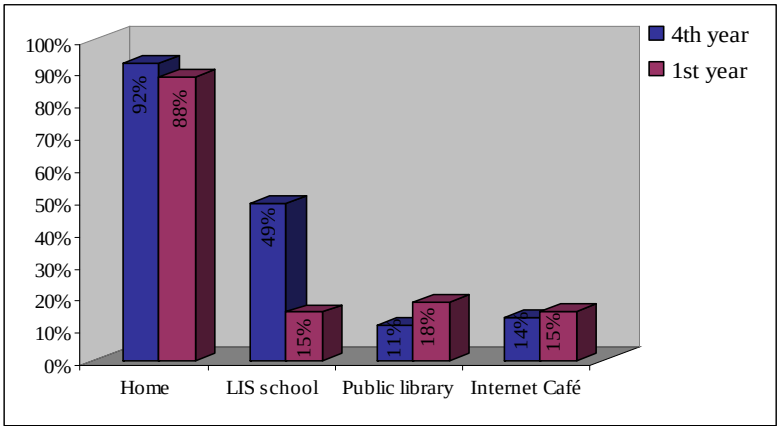


Figure 6.3 Use of ICT equipment by gender

Moreover, 90% of the students indicated that they were using ICT equipment mainly from their "home" followed by LIS School (29%); this was indicated by 49% of the 4th year students, (Figure 6.4). Use of ICT equipment was nearly the same at the "internet café" (14%) and the "public library" (15%). The reasons for this could be due to fees paid at cafés and low internet connection at the public libraries.



(*N* = 225, multiple response)

Figure 6.4 Where use ICT equipment by year of study

6.7.3 ICT skills level

The students' ICT skills were examined by asking them to assess their overall ICT skills level and how well they were doing in certain ICT skills applications. It was found that the majority (71%) of the students had an "intermediate" ICT skills level. The majority of them (98%) went to public school except for four (2%) who had attended private school. However, 15% indicated that they were "beginners" and only 14% indicated that they were "proficient", (Table 6.8). In terms of gender, males appeared to be more "proficient" than females and more females appeared to have an "intermediate" level than males (Figure 6.5). Chi-square was also used to determine if there were statistical significance differences between the two variables, ICT skills level and gender. The results (chi-square = 2.12, df = 2, p = 0.345) showed that there was no statistically significant association between ICT skills level and gender.

Table 6.8 Students' current ICT skills level

ICT level	*Frequency*	*Percentage*
Proficient	31	13.8
Intermediate	160	71.1
Beginner	34	15.1
Total	225	100.0

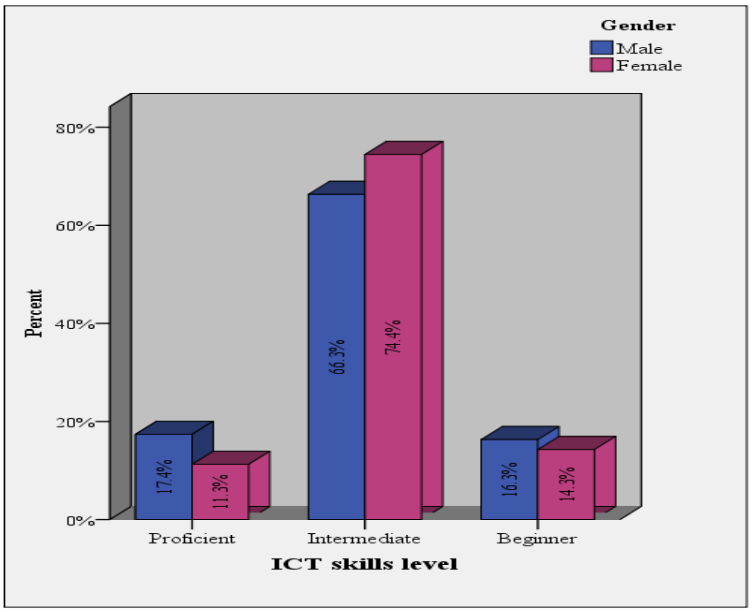


Figure 6.5 Current students' ICT skills level by gender

Although the 4th year students have already taken ICT courses and acquired practical training, still 73% (66% males and 78% females) rated their overall ICT skill level as "Intermediate" and only 21% (27% males and 16% females) rated it as "proficient". It is also worth noting that 7% described themselves as "beginners" (Table 6.9).

Table 6.9 Students' ICT skills level /gender/ year of study (Cross tabulation)

Current ICT skills level		***1st year***			***4th year***		
		M	F	Total	M	F	Total
Proficient	N	5	7	12	11	8	19
	% within gender	9.8	8.5	9.0	26.8	15.7	20.7
	% Total	3.8	5.3	9.0	12.0	8.7	20.7
Inter-mediate	N	34	59	93	27	40	67
	% within gender	66.7	72.0	69.9	65.9	78.4	72.8
	% Total	25.6	44.4	69.9	29.3	43.5	72.8
Beginner	N	12	16	28	3	3	6
	% within gender	23.5	19.5	21.1	7.3	5.9	6.5
	% Total	9.0	12.0	21.1	3.3	3.3	6.5
Total	N	51	82	**133**	41	51	**92**
	% Total	38.3	61.7	100.0	44.6	55.4	100.0

N= 225

The students were also asked, using a five-point Likert scale (1–5 = poor–excellent), to rate their ICT skills level in terms of each of the following skills: using office applications; library automated systems; maintaining in-house databases; designing and developing web pages; searching and retrieving information from databases and the internet.

Table 6.10 represents the ICT skills level that was achieved by choosing the appropriate level of each skill (excellent, very good, good, intermediate, poor). In addition the mean scores were calculated for each skill in order to determine the highest ranked skill (the higher the mean the higher the skill is rated). It was encouraging to note that the "search and retrieve information from internet" was rated as the top skill by students (rank 1); followed by the "use of office applications" (rank 2). The next rated skill (rank 3) was "searching and retrieving information from databases". The "maintenance of in-house databases" (rank 5) and "design and develop web pages" skills (rank 6) receive the lowest rates, as these were not taught as courses on their own at the DLIS nor was it available to females.

Table 6.10 Highest ranked ICT skill

ICT skill	*Excellent/ very good*	*Good/ intermediate*	*Poor*	*Mean*	*SD*	*Rank*
Search and retrieve information from internet (6)*	156	56	13	3.93	1.244	**1**
Use of office applications (1)*	113	79	33	3.27	1.369	**2**
Search and retrieve information from databases (5)*	104	94	27	3.26	1.304	**3**
Use of library automated systems (2)*	65	112	48	2.67	1.231	**4**
Maintenance of in-house databases (3)*	29	113	83	2.12	1.101	**5**
Design and develop web pages (4)****	21	55	149	1.67	1.129	**6**

*Position of ICT skill in questionnaire
Note: scale 5 = Excellent, 4 = very good, 3 = good, 2 = intermediate, 1 = poor.

6.7.4 Benefits of ICT skills

The students were asked, using a six-point semantic differential scale, to indicate the usefulness of their ICT skills. Nearly half of them (49%) indicated that they found their ICT skills "useful", while a total of 13% found them to be ranging from "3", "2" and "1", indicating their lack of use (Table 6.11).

Table 6.11 Usefulness of ICT skills

Usefulness	*Frequency*	*Percent*
1	4	1.8
2	11	4.9
3	14	6.2
4	28	12.4
5	57	25.3
6	111	49.3
Total	225	100.0

Note: Scale 1 = Useless to 6 = Useful

The use of ICT skills were listed for six items: office applications, library catalogues searching, database searching, internet searching, web design and construction, and emailing. Respondents were asked to "tick all that applies". Table 6.12 shows the

students' use of ICT for the different skills. It was found that the "internet searching" was the most used skill by 88% of the students, followed by "emailing" (45%), "office application" (43%), "database searching" (28%), and "library catalogues searching" (25%). The "web page design and construction" (10%) was the least practised as a skill. The last three uses, with the least percentages, indicated that the students had little use and less knowledge of these skills.

Table 6.12 Use of ICT

Why use ICT	Responses		
	Frequency	**Percent**	**Percent of Cases**
Office applications	98	18.3	43.8
Library catalogues searching	55	10.3	24.6
Databases searching	63	11.8	28.1
Internet searching	197	36.8	87.9
Web page design and construction	23	4.3	10.3
Emailing	100	18.7	44.6
Total	536*	100.0	239.3

* N = 225, multiple response.

The respondents were further asked to specify the benefits they thought they gained by using ICT. Table 6.13 indicates the respondents' views concerning the benefits gained. The students emphasised that they used ICT mostly for educational purposes. This was indicated by them as "find the needed information" (72%), "produce quality course assignments" (50%) and "ICT skills improvement" (45%). However, 45% indicated that they also used ICT for "entertainment" and only 30% indicated they used it for "time saving". Furthermore, 2% listed other benefits they thought they gained such as: communicating with family abroad; keeping pace with technology; curiosity; searching multiple resources; increasing knowledge; and making money. One of the 4th year students noted that he had just recognised the importance of ICT.

Table 6.13 Benefits gained from ICT use

ICT skills benefits	Responses		
	N	%	% of Cases
Entertainment	101	18.4%	44.9
Time saving	68	12.4%	30.2
ICT skills improvement	101	18.4%	44.9
Find needed information	162	29.5	72.0
Produce quality course assignments	112	20.4	49.8
Others	5	.9	2.2
Total	549*	100.0	244

N = 225, multiple response.

6.8 ICT skills training/teaching and the curriculum

Two questions were asked to indicate the students' perception of the theoretical teaching and practical training they received from the ICT courses. Respondents were asked to indicate, using a six-point semantic differential scale, whether the degree of ICT skills practical and theoretical teaching had been sufficient or not. Figure 6.6 displays the degree of practical training provided according to year of study. It is apparent that most students from the 1st and 4th year did not think that that the training provided was "sufficient" most of their responses ranged from "1" to "3" with a mean of 2.99 for the 1st year and a mean of 3.55 for the 4th year. The theoretical teaching provided also (Figure 6.7) appeared to be insufficient as indicated by most respondents' responses ranging from "1" to "3" with a mean of 2.52 for the 1st year and a mean of 2.63 for the 4th year.

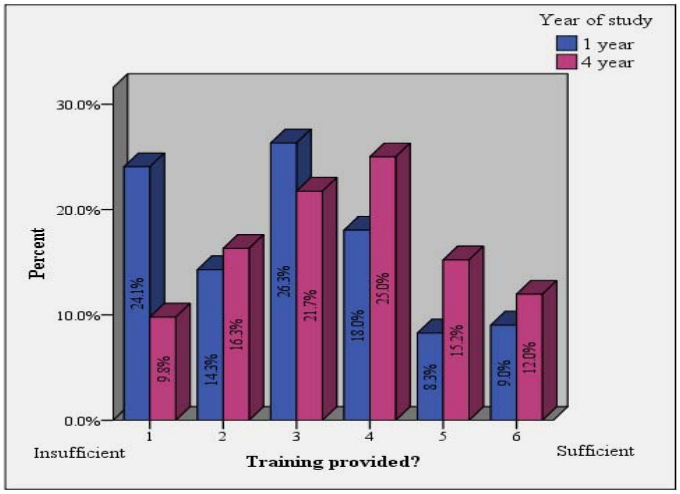


Figure 6.6 Degree of practical training provided

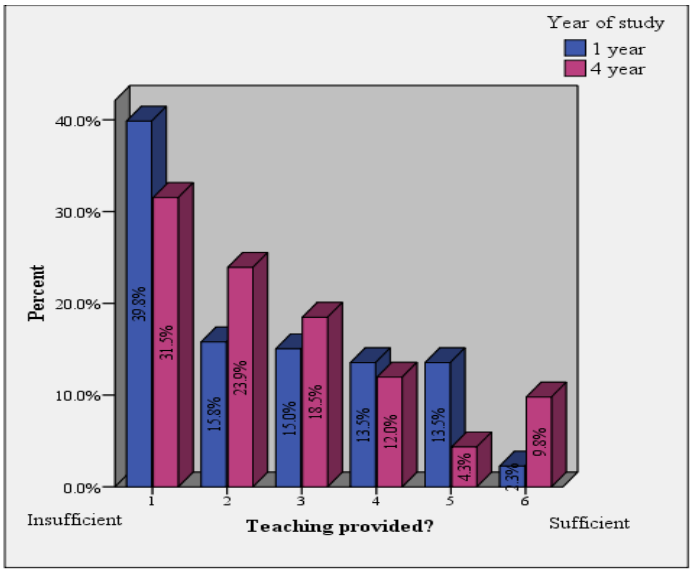


Figure 6.7 Degree of theoretical teaching provided

A balance of practical and theoretical teaching is a good approach to allow the integration of ICT into the curriculum (Minishi-Majanjaa & Ocholla 2004, p.195). To assess this, a chi-square analysis was conducted to determine if there were statistical significance differences in terms of the training and teaching provided. The "5" and "6" categories were combined to gain enough validated data. The results (chi-square = 81.46, df = 16, p =.000) showed that there was a significant association between the practical and theoretical teaching provided, indicating a positive relationship between the two variables. It implies that practical and theoretical teaching had an apparent association.

The respondents were also asked the kind of training they preferred. The most common method of preferred training was the "group training" (36%) followed by "one-to-one" (19.7%), whereas "self study" (15%) was the least preferred method of training. The percentages for the other preferred forms of training did not differ very much; "intensive ICT courses" (16%), "online training" (16%) and "self study" (15%). Although "online training" comprises of traditional teaching methods; alternatives provided through recent ICT developments; provides educational programmes with new methods of learning to meet the students changing needs; and enriches the learning environment (Minishi-Majanjaa & Ocholla 2004, p.196), it was

only preferred by 16% of the students (Table 6.14), most of them were in their 1st year, (Table 6.15). Moreover, while 21% of the 4th year students preferred "intensive ICT courses" only 12% at the 1st year preferred it. Chi-square was used to determine if there were statistical significance differences between the kind of training preferred and the year of study. The results (chi-square = 4.07, df = 4, p = 0.396) showed that there was no statistically significant association between the two variables.

Table 6.14 Form of training preferred

Form of training	*Frequency*	*%*
One-to-one	42	18.7
Group training	80	35.6
Intensive ICT course	35	15.6
Online training	35	15.6
Self study	33	14.7
Total	225	100%

Table 6.15 Form of training preferred/year of study (Cross tabulation)

Form of training	**Year of study?**					
	1st year	**%**	**4th year**	**%**	**Total**	**%**
One-to-one	27	20.3	15	16.3	42	18.7
Group training	51	38.3	29	31.5	80	36.6
Intensive ICT course	16	12.0	19	20.7	35	15.6
Online training	21	15.8	14	15.2	35	15.6
Self study	18	13.5	15	16.3	33	14.7
Total	133	59.1	92	40.9	225	100.0

It has been recognised that skills and confidence increase as students approach their final year of study. To assess this, the students were asked, using a six-point semantic differential scale, about their confidence in their ICT skills and use of ICT applications. It appeared that the majority of the students had confidence in their ICT skills as most of their replies ranged from "4" to "6". Moreover, less students of the 4th year indicated "not confident" in their ICT skills, responses ranged from "1" to "3" (Figure 6.8).

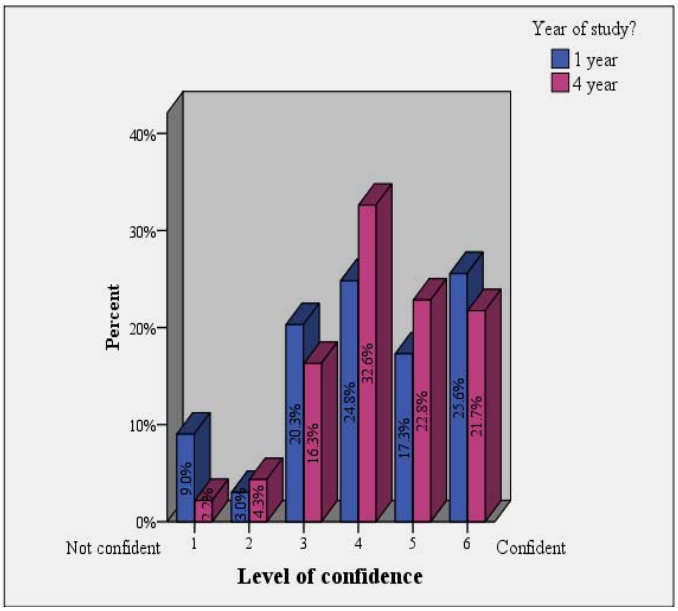


Figure 6.8 Confidence in ICT skills

6.9 Difficulties and negative factors influencing ICT skills improvement

To identify whether or not the students were facing difficulties in using ICT, they were asked about the ease of using ICT applications using a semantic differential scale. Figure 6.9 illustrates the respondents' views. Since most respondents rated their overall ICT skills level as "intermediate" (71%) and "proficient" (14%), it was apparent that ICT applications were viewed to be "easy" to use by most respondents. It was also found to be less difficult by the 4th year respondents.

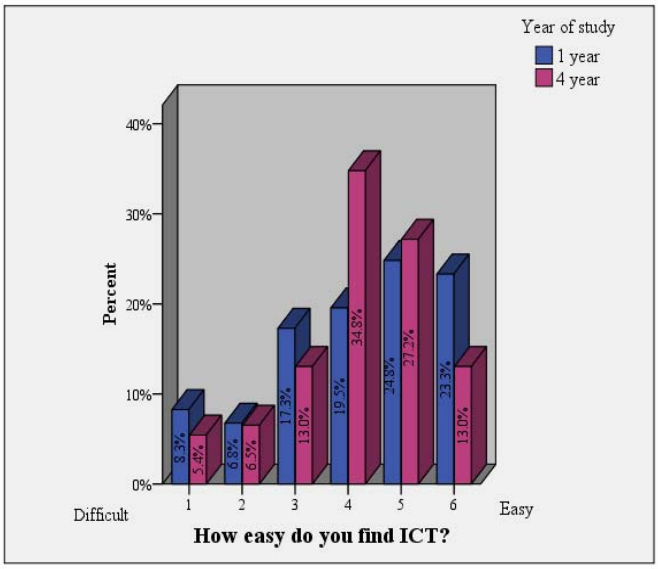


Figure 6.9 Ease of ICT applications

Furthermore, the students were asked to identify the difficulties that had hindered their ICT skills training. Their responses are presented in table 6.16. More than half of the respondents (55%) identified "not enough training provided by the DLIS" (Rank 1) and "not enough courses offered" (Rank 2) (52%) as the most critical difficulties they were facing. Other difficulties they faced were "not enough hardware" (33%) (Rank 3), "not enough teaching staff" (26%) (Rank 4), "teaching staff lack ICT skills" (26%) (Rank 4), "low maintenance" (25%) (Rank 5), "low internet connection" (25%) (Rank 5). Less important problems faced were "not enough software" (16%) (Rank 6), "do not know" (11%) (Rank 7) and 9% indicated that they "do not have access at home" (Rank 8).

Table 6.16 Difficulties faced by respondents

No.	Difficulty	Rank	Responses		
			N	%	% of Cases
1.	***Not enough training provided by DLIS*** (8)*	**1**	123	19.7	54.7
2.	***Not enough courses offered*** (1)*	**2**	117	18.8	52.0
3.	***Not enough hardware at DLIS*** (4)*	**3**	74	11.9	32.9
4.	***Not enough teaching staff*** (2)*	**4**	58	9.3	25.8
5.	***Teaching Staff lack ICT skills*** (3)*	**4**	58	9.3	25.8
6.	***Low maintenance*** (6)*	**5**	57	9.1	25.3
7.	***Low internet connection*** (7)*	**5**	57	9.1	25.3
8.	***Not enough software at DLIS*** (5)*	**6**	36	5.8	16.0
9.	***Do not know*** (10)*	**7**	24	3.8	10.7
10.	***Do not have ICT access at home*** (9)*	**8**	20	3.2	8.9
	Total		624**	100.0	277.3

*Position of difficulty in questionnaire
** N = 225, multiple response.

In addition, the students were asked if there were negative factors affecting their ICT skills improvement, (Table 6.17). They indicated that they were mostly influenced by their "peers" (35%) to improve their ICT skills. However, 29% indicted "does not apply", 21% indicated "family", and 20% indicated "social traditions". "Gender" was selected by only 9%. The least influencing factor was "religion" (8%). Under the "others" (9%) factors listed were:

- no assistance provided by the DLIS;

- illiteracy in ICT usage;
- no time having assignments and exams;
- having family responsibilities;
- dislike using ICT;
- having other daily duties;
- not finding the appropriate environment at home and college;
- English language;
- the curriculum is outdated;
- no personal interest.

Table 6.17 Factors affecting ICT skills improvement

Factors	Responses		
	N	%	% of Cases
Gender factor	21	7.1	9.4
Peer influence	79	26.7	35.3
Social traditions	46	15.5	20.5
Religion	18	6.1	8.0
Family	47	15.9	21.0
Does not apply	65	22.0	29.0
Others	20	6.8	8.9
Total	296*	100.0	132.1

* N = 225, multiple response.

6.10 ICT skills support and improvement for learning

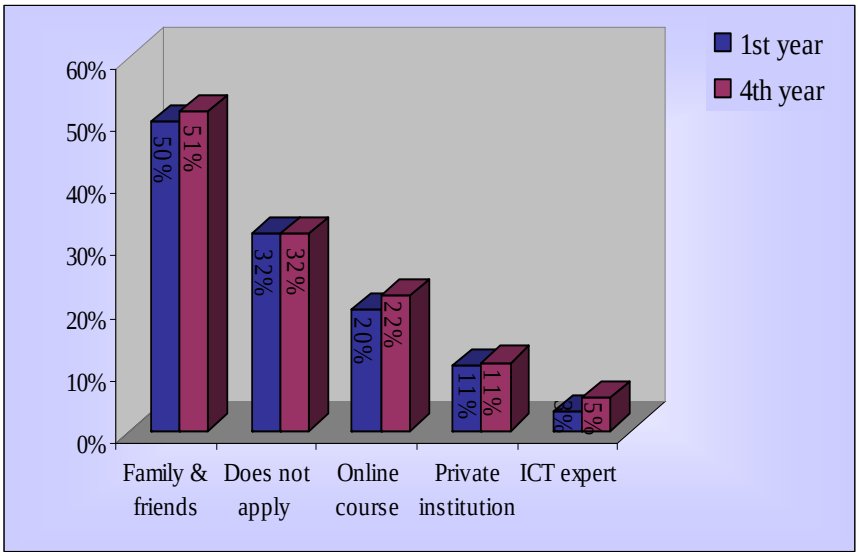
More than half of the students (64%) indicated that they were interested in improving their ICT skills. This was measured using a six-point semantic differential scale, (Table 6.18). Moreover, Figure 6.10 indicates that 50% of the respondents took courses from "family and friends" to improve their skills; out of this 51% were in their 4th year. It is worth noting that 32% ticked the "does not apply" option as their only choice, of which 32% of them were from the 4th year. This implies that the 4th students were making use of the ICT courses they were taking. The "online course" was the third option selected. The "private institutions" and "ICT expert" were the least options chosen to improve ICT skills. In addition, table 6.19 illustrates the rationales behind the students' ICT skills improvement. 62% indicated that they are

improving their ICT skills to "continue their education", 48% indicated that it's a "LIS school requirement", and 25% thought they improved them because of "job opportunities".

Table 6.18 Interest in improving ICT skills

Level of interest	*Frequency*	*Percent*
1	9	4.0
2	5	2.2
3	11	4.9
4	14	6.2
5	42	18.7
6	144	64.0
Total	225	100.0

Note: Scale Not interested = 1 to Interested = 6



(*N* = 225, multiple response)

Figure 6.10 Courses taken to improve ICT skills by year

Table 6.19 Rational of ICT skills improvement

Why develop ICT skills	Responses		
	N	Percent	% of Cases
Continue your education	139	45.7	61.8
LIS school requirements	109	35.9	48.4
Job opportunities	56	18.4	24.9
Total	304*	100.0	135.1

* *N* = 225, multiple response.

Motivation, such as encouragement, contributes to the improvement of ICT skills. The students were asked about the factors that motivated them, for example what encouraged them, to learn new ICT skills. Students seemed to be most motivated by their "personal interest" (58%) followed by "produce quality course assignments" (50%), "self satisfaction" (42%) and "job opportunities" (24%). "social factors" received a low percentage (8%) as a motivational factor (Table 6.20).

Table 6.20 Motivating factors to learn new ICT skills

Factors	Responses		
	N	%	% of Cases
Self satisfaction	95	23.1	42.2
Personal interest	131	31.9	58.2
Social factors	18	4.4	8.0
Produce assignments	112	27.3	49.8
Job opportunities	55	13.4	24.4
Total	411*	100.0	182.7

* *N* = 225, multiple response.

The students were asked if they were motivated, for example were they encouraged, at the DLIS and at home to improve their ICT skills. This was measured on a six-point semantic differential scale ranging from "not motivated" to "motivated". Figure 6.10 illustrates the students' motivation to improve their ICT skills by the DLIS. The students in both years of their study seemed to be not motivated by the DLIS, most of their responses ranged from "1" to "3". Implying that the teaching staff or the ICT courses taught did not encourage them to improve their ICT skills.

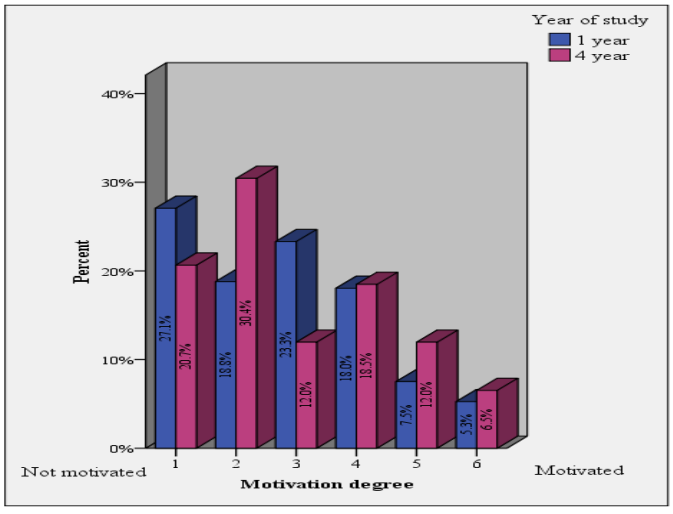


Figure 6.11 DLIS motivation to improve students' ICT skills

On the other hand, Figure 6.12 illustrates that the students in both years were motivated at home to improve their ICT skills. Most of their responses ranged from "4" to "6" motivated. This implies that the students were encouraged by their families at home to use ICT.

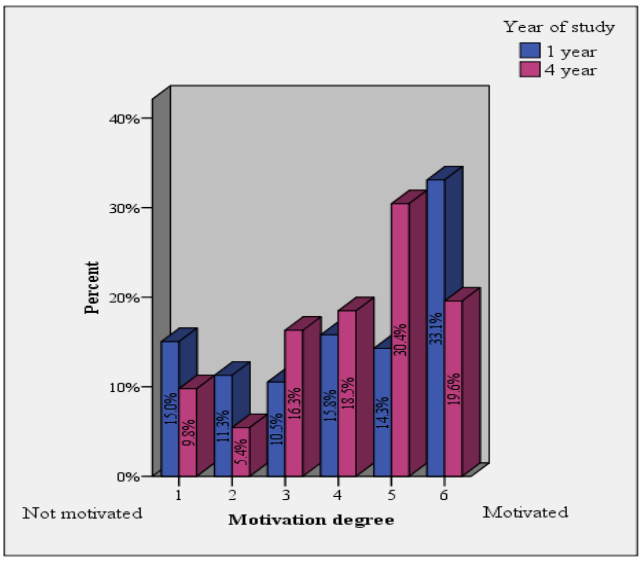


Figure 6.12 Home motivation to improve students' ICT skills

Moreover, correlation was performed to assess the association between the last six questions of the questionnaire (Table 6.21). The Spearman's rho correlation coefficient was used to examine the relationship, strength of association (negative or positive) and the direction between the ordinal scales in these variables. Table 21 presents the correlation coefficient (always between +1 and -1) the nearer the correlation to either +1 or -1, the stronger the correlation and the significance. The numbers of cases used were 225 in all the variables. It was hypothesised that there is no association between the variables. The correlation between these variables was high for all the variables; the null hypothesis was rejected, except for the "DLIS motivation" which had no significant correlation with any of the variables. In addition, the correlation between "interest" and "easiness" also had low correlation and was not statistically significant ($r_{s=}$ .107, N = 225, p = .110), indicating that that there was no association between these attitudes.

Table 6.21 Relationships between variables to assess students' attitude

Variables		DLIS motivation	Home motivation	Interest	Usefulness	Easiness	confidence
DLIS motivation	Correlation Coefficient	1.000	.124	.103	.006	-.080	.072
	Sig. (2-tailed)	.	.062	.124	.928	.235	.281
Home motivation	Correlation Coefficient	.124	1.000	.331**	.189**	.163*	.267**
	Sig. (2-tailed)	.062	.	.000	.004	.015	.000
Interest in developing skills	Correlation Coefficient	.103	.331**	1.000	.392**	.107	.252**
	Sig. (2-tailed)	.124	.000	.	.000	.110	.000
Usefulness of ICT skills	Correlation Coefficient	.006	.189**	.392**	1.000	.217**	.273**
	Sig. (2-tailed)	.928	.004	.000	.	.001	.000
Easiness of ICT application	Correlation Coefficient	-.080	.163*	.107	.217**	1.000	.349**
	Sig. (2-tailed)	.235	.015	.110	.001	.	.000
Confident in ICT skills	Correlation Coefficient	.072	.267**	.252**	.273**	.349**	1.000
	Sig. (2-tailed)	.281	.000	.000	.000	.000	.

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

In summary, the correlation coefficient end results showed that there was a significant positive correlation between "confidence" and "easiness", "usefulness" "home motivation" and "interest", indicating that students who were confident in their ICT skills found ICT applications to be easy; they found them to be useful; they were motivated at home; and were interested to improve their ICT skills. There was also a significant positive correlation between "home motivation" and "interest", "confidence", "usefulness" and "easiness", indicating that students who were motivated at home to improve their ICT skills were also interested to improve them; they were confident in their skills; they found them to be useful; and found them to be easy to apply. There was a significant positive correlation between "usefulness" and "interest", "confidence", "easiness" and "home motivation", indicating that students who found their ICT skills to be useful were interested in improving them; they were confident in their skills; they found ICT applications easy; and were motivated at home. Another significant positive correlation was between "interest" and "usefulness", home motivation" and "confidence" indicating that students who were

interested to improve their ICT skills have found them to be useful; they were motivated at home; and they had confidence in their skills. Finally, there was a significant positive correlation between "easiness" and "confidence", "usefulness" and "home motivation", indicating that students who found ICT applications to be easy had confidence in their ICT skills; they found them to be useful; and were motivated at home (Table 6.21).

6.11 Conclusion and main findings

The quantitative findings of the questionnaires showed that about 40% of the respondents reported that they had learned to use ICT equipment from their previous education. The majority of the students (71%) indicated that they were at an "intermediate" ICT skills level but more males indicated their level as "proficient". Most students used ICT equipment "daily" or "weekly" to perform different activities; male students used them more frequently than females on a "daily" basis. The "search and retrieve information from internet" skill was rated as the top skill and was the most frequently used skill by 88% of the students.

The students indicated that they were using ICT equipment mostly from their homes. The 4th year students mainly used ICT on their own and the majority of the 1st year students indicated that they "sometimes need assistance". The most common and preferred method of training was "group training". To improve their skills the students were mostly influenced by their "peers" (35%). 50% of them took courses from "family and friends" and 62% indicated that they were improving their ICT skills to "continue their education".

Almost half of the students (49%) indicated that they found their ICT skills "useful" and that they used them mostly for educational purposes. It appeared that most students had confidence in their ICT skills. 78% of the 4th year, found ICT applications to be less difficult.

More than half of the students indicated that they were interested and were motivated at home to use ICT and were mostly motivated by their "personal interest" to improve

their ICT skills. However, they did identify difficulties or factors that hindered their ICT skills improvement. Most students did not think that the ICT skills training and teaching provided was “sufficient”. More than half of the respondents (55%) identified “not enough training provided by the DLIS” and “not enough courses offered” (52%) as the most critical difficulties they were facing. In addition, the students did not feel motivated by the DLIS to improve their ICT skills. The next chapter will illustrate further discussion of related issues based on the outcomes of this chapter, questionnaire analysis, and the previous chapter, interviews’ analysis.

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Chapter Seven: Qualitative data analysis of Focus groups

7.1 Introduction

The focus groups were the second stage (the first stage were the interviews and the questionnaires) data collection method. The use of focus group techniques in this research was to explore in depth the main issues that arose in the first stage of the data collection. These issues included the LIS graduates ICT skills and the needs of the job market; collaboration in curriculum design and implementation; ICT skills teaching and learning environment; and ICT skills hindrance and improvement. The focus groups also represented an opportunity to enrich the main areas of research interest by encouraging participants to explore their opinions and attitudes. The focus groups included two of the main research subjects, employers and students. This helped in identifying any gaps in the ICT skills teaching and learning environment. In addition to, pointing out the contradictions in the opinions and attitudes on students' ICT skills.

7.2 Characteristics of interviewees

Three focus groups were conducted. The first group consisted of public sector employers, who trained and employed LIS graduates. Table 7.1 shows the public sector employers' organisations, occupation, degree, and experience. The second and third focus groups consisted of the 4th year LIS students, male and female. These students volunteered to participate in the focus groups, by providing their contact details, they were assumed to have better ICT skills than others; this may have influenced their enthusiasm to volunteer.

Table 7.1 The public sector employers' characteristics

Organisation	Occupation	Degree	Experience
Kuwait Awqaf Public Foundation - Administration of Information	Manager	MLIS	23 years
Ministry of Education - Librarianship Supervision	Technician	MLIS	21 years
General Secretary of the Council of Ministers - Centre of Information Documentation	Head	BA LIS	11 years

Organisation	Occupation	Degree	Experience
KISR - National Scientific & Technical Information Centre	Information Specialist	MAIR	23 years
Kuwait News Agency - Library	Head	BA DL	25 years
Kuwait University - Jaber Alahmed Library	Information researcher	BA EL & Lit.	8 years
PAAET - Educational Resources Administration	Information Specialist	MLIS	15 years

7.3 Organisation of data

As stated previously, the focus group questions were prepared according to the themes that had emerged from the initial analysis of the interviews. The focus groups focused on the following three issues:

1) Graduates ICT skills and the needs of the job market;
2) Collaboration in curriculum design and implementation;
3) ICT skills teaching and learning environment.

The themes that emerged were divided into six sections as follows (Figure 7.1):

- ICT skills definition
- ICT skills teaching and learning environment
- Job market skills needs
- Collaboration in curriculum design and implementation
- ICT skills hindrance
- ICT skills development

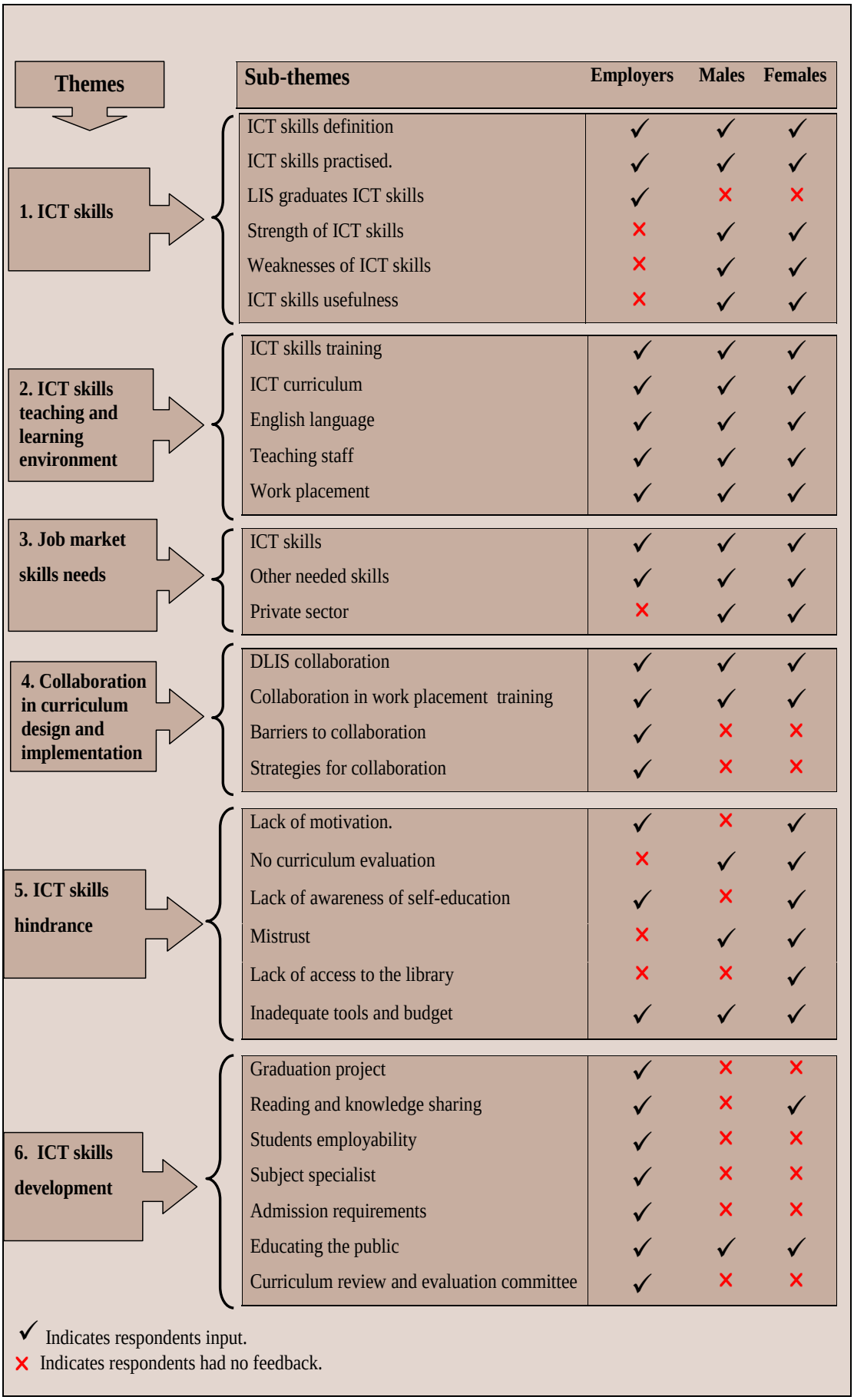

Figure 7.1: Thematic analysis of qualitative data: Focus groups

7.4 ICT skills

In order to gain the participants' awareness on ICT skills, the groups were asked questions related to the ICT skills definition and practise. The employers were asked for their view of LIS graduates ICT skills. The two students groups were asked about the strengths, the weaknesses, and the usefulness of these skills.

7.4.1 ICT skills definition

As "ICT skills" is a new term in Kuwait, the term "IT" was more commonly used, the first questions the participants were asked if they could define the term. This was intended to illustrate their understanding so that they could participate clearly. The employers showed an understanding of the meaning of the term. Three participants said:

> *Mainly knowing how to use a PC, using software such as: Word, Excel, Access, spreadsheets, communicating by the use of electronic resources, and using and navigating the internet.*
>
> *Using automated library systems. Knowing how to use Horizon, this being the most widely used system in Kuwait.*
>
> *Knowing the structure of databases, how to search and use them.*

Because the students (males and females) were already aware of the definition from completing the questionnaire, they showed a good understanding of the ICT skills definition. The male students group gave the following answers in response to the term ICT:

- To search for information and to define it.
- Networking electronically.
- The computer and other technologies.
- Communication, databases and the internet.
- Everything used to get information through communication methods.

The female students group gave the following answers:

- Using the computer and electronic tools.
- Using modern electronic tools to search for information.
- Applying different electronic methods to get the needed information.
- Making use of technological tools.

To ensure that the participants could take part in the discussion easily and were readily able to follow the conversation, the assistant moderator handed out the definition of the term to all three groups before the discussion took place. The participants showed full understanding of ICT throughout their comments and discussion, as will be shown later on in the other themes.

7.4.2 ICT skills practised

Employment organisations in Kuwait practise a range of ICT skills including document and database management (for example using Microsoft Access), system architecture (designing in-house management systems for information centres and libraries), intranet design management (designing a network for the organisation to share its information such as its private website), web applications (such as using webmail) and searching (searching different search engines), indexing and cataloguing of electronic resources (such as Horizon that has been heavily used in the Arabian Gulf region due to its Arabic and local support) (Khurshid 2003), and using technological systems including Integrated Information Network (IIN) (such as Digital Library Systems). Employers were asked to describe the ICT skills that were practiced in their organisations. They indicated the following:

> *All our procedures are handled electronically. Searching and using the library automated systems is one of the most important employment requirements at the organisation. We use Horizon, a fully automated library system, for acquisition, cataloguing and circulation. All our memos, reports and internal letters are processed and sent electronically.*

> *We are in the process of building a digital library, in which e-journals, e-books and an electronic document delivery system will be used. In addition, all our daily procedures such as checking emails and sending daily letters, registration of all the library materials and checking their availability, alerting users, and bar coding are made electronically now.*

> *Using Microsoft Word for creating documents, making presentations, and emailing intensively. Nothing in the organisation is sent by hand or typed on paper now, we are going paperless. The organisation has set a*

> *wireless environment. We need all of these skills in addition to designing a webpage, which is a must to provide web services and searches through databases such as Science Direct and Dialog.*

However, not all the participating employers were using ICT. Two participants commented:

> *The situation in my organization is very depressing. There are only two computers in every school library (…). We are in the process of bar-coding all of the libraries collections now. We are hoping that circulation will be done electronically and all libraries will have an automated library system.*

> *Our procedures are still manual, we are trying to develop and will be getting an automated library system.*

With regard to the students, while the male group showed a good understanding of the term ICT, they stated that they used ICT only when they were assigned a task that needed it. The females, however, were more positive towards their ICT skills and used different applications than the males, for example they used Microsoft Access and online library acquisition. They pointed out that they were using ICT daily and as follows:

- doing research papers;
- searching the internet;
- doing presentations using Power Point;
- searching the LCSH;
- designing web pages;
- searching databases;
- using Microsoft Access;
- electronic library acquisition.

The females indicated that they were using ICT more often than the males, although they were mistrusted to use them, discussed in section 7.8.4. The gender issue that emerged here implied that females were either more often assigned a task or they had

an interest to use ICT more than the males who were only using ICT when they were assigned to it.

7.4.3 LIS graduates' ICT skills

The employers confirmed that LIS graduates did not have all of the skills they required. Nevertheless, "*they graduate with having 50% of them such as using office applications, searching online engines, and database. They don't know them skilfully but they improve them after employment, through experience and attending workshops*". Moreover, they specified some ICT skills these graduates lacked:

- Electronic cataloguing and classification skills.
- Online database searching such as Dialog.
- "*…ICT skills such as searching and retrieving information and knowledge to use and practice these skills".*

The employers assumed that graduates should have these skills as the minimum skills they should learn during their LIS education and that they would improve them further after employment through training.

7.4.4 Strength of ICT skills

The female students gave a fairly positive attitude on the programme being "*good*". The two students groups (males and females) were asked about the skills they had learned and the strength of their ICT skills, since they had joined the programme. The females had positive comments regarding the programme and the strength of their ICT skills, whereas the males gave only negative views, detailed in the next sub-theme 7.4.5. The females commented that their strengths were:

Searching information

> *I am proud I joined the programme. It gave me a chance to learn a lot. I am helping my friends in other departments to search for information quickly and accurately.*
>
> *My computer skills are better in searching due to the practice I do.*

Using library automated system

> *Searching information electronically, performing daily library procedures and job activities of a librarian using the library automated system.*

> *Searching electronically and using the library's electronic systems. I used to go to the library and ask for the information I needed. Now I totally depend on myself to get what I need.*

English terminology

> *I learned different English terms and that had helped me in database searching. I think without knowing the terminology you will not be able to search effectively.*

Non-ICT skills

In addition the females indicated other non-ICT skills they have learned:

> *Being independent, making presentations, reading articles, and knowing some LIS abbreviations and terminology.*

> *I have learned how to do surveys by helping teaching staff. Evaluate, search information, and gained some social relations with experienced people in the field.*

> *In some courses we search for information. We are assigned to do this almost weekly. Some teaching staff requires us to search, present our work, read new articles, discuss issues; they do not depend on the course book and even ask us to prepare for the lectures (...). I think the programme gave us self-confidence. The programme is progressing especially in the use of technology.*

The females' different inputs regarding the strength of their ICT skills and what they have learned reflect their positive views of the DLIS programme. They also stated that they were practising these skills in different activities (for example searching for information and searching the library automated system) at the department, in contrast to the males group who did not appear to have positive views, discussed below.

7.4.5 Weaknesses of ICT skills

The two groups were also asked about the weaknesses of their ICT skills. They stated that their weaknesses lies in their insufficient searching skills, not searching skillfully, not refining searches and finding the right information, lack of their training, and of their independence as the following comments illustrated:

Search skills

> *A lot of libraries in Kuwait are still not automated and this is a problem. People there do not know how to search and I'm one of them, if I use Google I'll get lost.* (Male)

> *We know how to use search engines but not databases; we only took one elective course which was not enough.* (Female)

> *We need to learn searching strategies for example to search and analyse.* (Male)

> *Our weakness lays in not being capable of searching proficiently.* (Female)

Searching other domains

> *We can search for information in our field but not in others. The weakness lays in capturing the right information from different electronic resources and then evaluating it.* (Male)

Communicating with users

> *Our weakness lays in communicating with users. We were not trained to help the library users in dealing with their queries. Technology has made this a lot easier through searching, electronic alerts and the use of library systems but we are not trained to do this.* (Male)

Style of teaching and learning

> *I think the weakness lays in the curriculum and on us; we memorise, take the exam, and that is it. We are very dependent in learning; we do not try to improve our skills on our own.* (Female)

Both groups showed some weaknesses in their ICT skills, and were critical on aspects of the educational process and the training they have practised. The improvement of the educational process and the training together can improve the students' ICT skills.

7.4.6 ICT skills usefulness

The students were asked how useful they found their ICT skills when they went for work placement training. Both groups mainly stated that they did not have enough ICT skills such as subject specialist searching, formulating search strategies, and searching databases to practise in these organisations. The skills they had were basic, for example they did not know how to use online databases or use the advanced

search strategies because they were not trained enough and they had limited English language terminology to use. They stated that their ICT skills level was "*low*" and that "*one student out of ten had very good ICT skills*". They thought that they "*didn't have good skills*" and described their skills as being "*dated*", for example they were not being trained using the latest software. Moreover, some of the work placement organisations were very advanced in using technology and performing operations such as using Online Public Access Catalogue (OPAC), Selective Dissemination of Information (SDI) current awareness systems and Inter Library Loan (ILL). Others were using different systems (such as Virtua and Unicorn) than the ones the students were trained on (such as Horizon) during their LIS studies. The rest had no technology to train students on and were using "*manual methods*".

However, two (out of six) males found the organisations they were trained in very positive, they stated:

> *I didn't have a problem where I was trained. The place is very developed in terms of technology. It was a bit hard to use the system but you could easily adopt because it's in Arabic.*
>
> *We were trained on different library procedures electronically and we benefitted because we applied all the theoretical part of the ICT courses we took.*

The two participants thought that one of them adopted the system because it was in Arabic. The other student indicated that he was able to apply the theoretical part of his studies, indicating the usefulness of the learning received. Although the males had negative comments (as previously stated) and did not think they had strength in their ICT skills, there is an implication here that the male students were making use of their ICT skills indirectly, even though they felt negative about them.

7.5 ICT skills teaching and learning environment

While the females had positive views about the programme and strength of their skills, the participants (employers, male, and female students) stated that the training methods were "*traditional*", the ICT curriculum was outdated and courses taught were very basic. In addition, they thought that the ICT curriculum needed to be

revised to include new skills. Some other issues were also discussed as the following sub-sections will explain.

7.5.1 ICT skills training

The participants were asked about the training methods the DLIS is currently using. The employers commented that the "*DLIS should use the latest in technology*"; this includes the latest in library systems, online databases, and providing a wireless environment. The students thought that the DLIS was using outdated teaching methods for the training of the ICT courses three students said:

> *Some teachers present the ICT courses using technology others use the traditional way of using books, memo, blackboard, and lectures.* (Male)
>
> *(…) the training methods are old and traditional.* (Female)
>
> *Some teaching staff makes good use of technology and some others depend on making us memorise the course where an exam is made and then everything is forgotten after it.* (Female)

The students groups complained about their training at the DLIS. One male thought that they, as 4th year students, were being trained on manual and traditional library procedures and that they did not "*even use a computer*" during their training. One female commented that they "*hardly get any training*". Another female thought that the department was not training them on all the available tools. For example they were trained on using "*Dewey and did not get a chance to use the Library of Congress classification*". Comments related to this were as follows:

Database and library systems training

> *They have a good theoretical idea on most of these skills but they need training for example using databases such as Dialog".* (Employer)
>
> *We were only trained on Dialog for a limited time. We are not qualified enough to work on other databases.* (Male)
>
> *We are good at Microsoft applications but not in databases and library systems, we did not use them very often and we still need training.* (Female)
>
> *We're not specialising in computing and systems. We do not need to design a system. We need to learn how to search, using very advanced*

> *searching techniques in databases and maintain the databases we are using.* (Female)

Consistent training

> *Training should be going on continuously; as we take the ICT courses. We take things in the first year and then get training on them in the last year!!* (Male)

Lack of time

> *Insufficient time is always given to training. We should be given more time to spend on training.* (Female)

Practical training

An employer proposed that "*LIS is mostly a technical specialisation in which practical training should be applied to all what is taught*". She added that "*grading should be more on the practical than the theoretical*". In addition, the majority of the students thought they should have more practical training to improve their ICT skills. One female said:

> *We don't want to learn the definition of a catalogue or a bibliography. We want to learn how to use these tools manually and apply this technology. This will then stick in our minds and we'll be able to develop it as a skill.*

However, the students revealed that there were some ICT courses that took them away for training and assigned them to use ICT, two students stated:

> *There are some fine ICT courses that give us useful assignments to do and took us on actual field training to information centres such as NISTIC*[12] *which was a very good experience.* (Male)

> *Some courses assigned us things very related to our work, while others gave us unrelated work and it was not even marked or looked at it.* (Female)

Moreover, one employer suggested that the "*students should be asked to select the best ways* (of training) *that would work for them*". The majority of the students and

[12] The National Scientific and Technical Information Centre (NISTIC) is an information centre in Kuwait Institute for Scientific Research (KISR). It was established to provide technological and scientific services to the institute to support its programmes and projects in research and development.

employers suggested the following as preferred methods and means to improve ICT skills training: having more practical training and online training tutorials; taking private courses; having the ICDL as a qualification; participating in workshops and seminars; arranging field trips to work placement organisations; and ICT as a minor degree. One male participant added:

> *As the 4th year LIS students, we should have all these skills (ICT skills defined) already, we shouldn't graduate and take these courses. We should learn new skills and improve them.*

The lack of training at the DLIS will lead to a deficiency on the students' overall skills performance when they go for work placement training and employment. Training students at the DLIS properly and regularly, using the latest technology and tools will prepare them for their professional life. In addition, the students and employers groups suggested strengthening the training methods currently used at the DLIS to improve the students' ICT skills.

7.5.2 ICT curriculum

The employers thought that the curriculum should "*complement the needs of the job market*". "*Changes should start at the DLIS sifting the whole curriculum and courses*". "*The curriculum needs to be strengthened with external expertise from other organisations to fulfil the gap in teaching and training of some courses needed by the market*". Additional subthemes that emerged under this theme were as follows:

7.5.2.1 Outdated curriculum

The students commented that the curriculum was outdated and no new ICT courses were added to it. Some of their comments were:

> *We have not seen any changes during the last three years.* (Male)

> *The curriculum is taught as it was maybe ten or more years ago. Nothing has been updated.* (Female)

The participants (employers and students) suggested that courses such as database searching, electronic cataloguing and electronic classification need to be added, while

other ICT courses need to be modified to deliver better ICT usage and skills, they stated:

Electronic cataloguing and electronic classification

> *Electronic cataloguing and classification should be taught as a separate course. The traditional courses are well taught and covered but students lack ICT courses that they can take to face the needs of the job market. There should be an increase in ICT courses.* (Employer)
>
> *There are no specialised courses in ICT usage in libraries, for example electronic cataloguing is not taught as a standalone course.* (Male)
>
> *We are good at manual cataloguing and classification but not in applying it using technology.* (Female)

Updated Technology

> *From the 130 unit we take, we get to take only five (15 units) ICT courses. We should be studying the latest technology to catch up with the worldwide advancement.* (Female)
>
> *There is no link between what is taught and what is going on in reality in terms of technology.* (Female)

Web pages and networking

> *I can deal with searching databases and the internet but I didn't learn anything about WebPages and networks.* (Male)

As was stated by the participants the ICT courses were outdated and new courses such as electronic cataloguing and classification, web pages construction, and networking are needed to be added to the curriculum. In addition, it was suggested that the DLIS should integrate the latest technology.

7.5.2.2 Unified curriculum

The students also thought that they, males and females, should be offered the same curriculum to have the same chances of ICT education. The ICT courses should have the same syllabus for both males and females. In addition to, having all the ICT courses as compulsory instead of being electives so that students graduate with the same ICT skills, their comments were:

Curriculum consistency

> *There are some ICT courses that are offered only once during the academic year and only eighteen students are registered to attend. This doesn't give us all a chance to have the same kind of learning.* (Male)

> *The theoretical and practical courses should be consistent. For example, one lecture is theoretical and the one after it is practical. The practical is always given shorter time.* (Male)

> *The course outline of one subject differs from one teaching staff to the other; there is no consistency and some courses contradict the others in providing suitable information.* (Female)

Compulsory versus electives

> *We are at the same department but we are not taking the same ICT courses because these are elective courses and the same course differs in its context from a teacher to the other.* (Male)

> *There is a gap because all the ICT courses are electives. We do not graduate having the same skills even if we are at the same cohort.* (Female)

The students viewed unifying the curriculum as important to improve their ICT skills. This included the consistency of the curriculum and offering the same compulsory and elective courses to both cohorts.

7.5.2.3 ICT courses

The students had further comments on the ICT courses they were taking at the DLIS. Their statements ranged from teaching them very basic ICT courses at the DLIS to having courses unrelated to technology. They commented the following issues:

Basic ICT courses

> *The Computer in the library*[13] *(preliminary) is a very basic course that concentrates on the historical development of the computer. I don't think we need this course to start with. We need something more advanced in ICT because nowadays everyone knows the basics of using a computer.* (Male)

[13] The only compulsory ICT course offered. It deals with the historical development of the computer, computer applications and computer programmes in the LIS field.

> *They are (the DLIS) giving us very basic things which we could learn from any computer course or manual.* (Female)

ICT courses unrelated to technology

> *Some of the ICT courses are repeated and some others are unrelated to technology.* (Male)

> *The Information marketing course[14] has nothing to do with ICT.* (Male)

ICT courses non-supplementation

> *The five ICT courses should be different in their context; with no repetition, one course should complement the other.* (Male)

> *There are gaps in the ICT courses. The advanced courses do not complement the preliminary ones.* (Female)

Information retrieving systems 444 ICT course

One male participant thought that "*the only good course was the Information retrieving systems 444[15]*", this was supported by his other colleagues as follows:

> *Little use of technology has been applied in our education. It's mainly manual; manual card catalogues and manual searching. Maybe only the Information retrieving systems course 444 is the only one that is completely technology dependent.*

> *The Information retrieving systems 444 was one of the best courses we took the teacher was up to date with the latest technologies. He taught us almost everything during one course; how to search, navigate, download, and design a web page.*

> *Nothing was added until recently with the help of one of the teaching staff in the 444 course. He taught us a lot in one course such as using FrontPage and searching electronic information resources.*

Nevertheless, one male student said:

> *I don't know anything about the Information retrieving systems course that everybody has been talking about because I didn't have a chance to take it. Only the students who took the course benefited from it.*

[14] An ICT elective course that deals with technical marketing definitions, marketing programmes and marketing related to libraries, and information centres in Kuwait.

[15] An ICT elective course, that deals with technical terms of information retrieving, systems, databases, and technology of communication in LIS education. It also evaluates databases and research results according to the information required in the field.

Although the students described some ICT courses as "*fine*", the three respondents groups were unenthusiastic about the ICT curriculum as it did not reflect the needs of the job market, was outdated, and un-unified. The students also though that even though they graduated from the same place, they did not possess the same ICT skills. The participants suggested adding a variety of ICT courses into the curriculum, having the same syllabus, the same ICT education between the male and female cohorts, and having the ICT courses all as compulsory, as this would improve the students' ICT skills.

7.5.3 English language and the curriculum

The participants pointed out a gap in the usage of the English language terminology. This affected the students' "*search strategy, searching different databases, and using search operators*" and the students' ICT skills learning and improvement. The majority of the students thought that they needed to "*learn English terminology to use it in our* (their) *daily life as LIS students*". They also thought that the English language should be instructed as part of the curriculum. Employers and students considered it crucial to learn English and ICT terminology, since most of the daily procedures, in house databases, and systems are in English. To overcome this, the DLIS has already started instructing one of the ICT courses at the female cohort in English and the students considered this as something useful. However, they stated:

English background

> *It depends on your background. If you have some skills and enough English you will progress and learn but those of us who do not have any previous knowledge will never progress because the programme will not help them to.* (Male)

Lack of English at DLIS

> *(…) there is not enough use of technology and English, although LIS studies depend on them heavily. The databases, programmes, and library systems we use at work placement are all in English.* (Female)

> *We need to have a good English vocabulary to get employed.* (Female)

Only one course of English

> *We are taught very basic terminology in the Readings in library science in English*[16] *202 course. We need to have good English to search and use different ICT.* (Male)

> *I think one course of English terminology through the whole four years period is inadequate. There are some programmes that are fully taught in English, I think most LIS courses or at least the ICT ones should be taught in English.* (Male)

English terms as compulsory and intensively

> *English language should be taught intensively and as a skill.* (Male)

> *English terms should be taught as a compulsory course because if your English is bad you cannot search or even use the computer.* (Female)

Since the language of instruction was Arabic at the DLIS, according to the students English language was a barrier to the learning process. The students lacked English language and LIS terminology to use in their daily conversations and LIS courses. It was recognised, by employers and students, that there was little use of the English language in the DLIS curriculum. This resulted in fewer opportunities to practice their ICT skills improvement and searching capabilities.

7.5.4 Teaching staff

As stated earlier some teaching staff were assigning students to practise their ICT skills and use technology by giving them assignment, such as sending their projects electronically and searching databases and the library system. "*They (the teaching staff) had good skills and made good use of technology*". However, the three focus groups criticised some teaching staff in the department as follows:

- No follow up to check the progress of the students and the training they get. (Employer training during work placement)
- Insufficient in number to cover the courses taught. (Employer training during work placement)
- Teaching different course syllabus in the same cohort or the two cohorts, males and females. (Male)
- Teaching staff ICT skills are not updated with the latest technology. (Female)

[16] A general education-elective course, deals with selected texts from LIS. Readings are made, while highlighting English terminology and their equivalents in Arabic LIS terminology.

- Practise the "*old traditional method of book, memos and exams*". (Female)

Overall the students thought the teaching staff were making "*good use of technology*" and assigning them to practise their ICT skills. However, the teaching staff (as was suggested by employers and students) were not equally qualified in their ICT skills. Some were experienced in using ICT while others were not, resulting in inadequate delivery of ICT skills to students and in not assigning them with tasks to practise their skills.

One employer and one female student supposed that in order to improve the students' skills, the teaching staff should update their ICT skills "*in using technology and applying it*". One male student also proposed that there should be specialised ICT teaching staff. Moreover, two participants said:

> *Teachers should be chosen carefully with expertise and efficiency"*. (Employer**)**
>
> *The teaching staff skills should be improved or perhaps they should be replaced.* (Male)

7.5.5 Work placement

Work placement training was insufficient to provide the skills needed by the job market, as students stated. The participants, students and employers, thought that the work placement training plan was inadequate and that there was lack of organisation between the DLIS and work placement organisations. These are illustrated within the following subthemes.

7.5.5.1 Work placement training plan

The three groups were asked whether or not they believed that the currently work placement ICT skills training plan was effective. Some of the employers thought that there was a plan but "*it does not state what kind of training we* (employers) *should provide*"; "*we set a training plan, a schedule, and any other training we think students should be provided with*"; and "*it's not specified in the ICT skills training and aims to achieve*". The male students thought that they should be informed about

the training plan and the females indicated that they "*should be trained according to a well developed plan*". One employer added that:

> *There is no adequate plan now. The previous one[17] had good planning in training students in different libraries during their training period where students were exposed to different technologies and systems used, such as databases and automated catalogues. Students had to submit a report on their training and on the activities they performed. Now there is no effective plan and training takes part in one organisation. It also depends on the supervisor's personal effort.*

Although the DLIS was using a training plan, the plan was not effective as stated by the three focus groups' participants. A number of employers and students proposed having a well developed plan between work placement organisations and the DLIS to improve the students' ICT skills training. It should include clear objectives of the training, grading scheme, students' follow up, and the skills they need to improve. Two employers added:

> *There should be a comprehensive plan for work placement training. This includes having a course book and a well organised plan with aims to achieve.*

> *A grading plan should be made by the department to evaluate students' ICT skills level in work placement training in every year and the improvement or weakening a student is making. How they are progressing? And what do employers think of students' ICT skills.*

The participants showed the need for a new written plan that needs to be followed as guidelines and agreed upon by the employers, teaching staff, and students to achieve better ICT skills training.

7.5.5.2 Lack of organisation

The male students thought that there should be some kind of organisation between the DLIS and employers on the training they are required to do. The females stated that "*there is no organisation between the DLIS and the places of training*" and students

[17] A work placement plan that was used before the existing one, the duration of work placement training was set during the four years of LIS education and students were exposed to training in different organisations.

"*should be trained at the DLIS and then get more training at work placement*" according to some organisation between the two.

Collaboration between the DLIS and work placement organisations in organising the students' training should be done, as suggested by the students. This includes setting a plan between the two parties with aims/objectives and using the plan as guidelines for training.

7.5.5.3 Well prepared work placement organisations

The male students criticised several work placement organisations for not being technologically equipped for their training. They added that they "*should be trained at the best organisations and in the most advanced technologically*". The employers supported this they also thought that the students "*should be trained in a complete technological atmosphere using updated technologies*", such as library systems and databases. However, two male students praised their work placement training organisation as being the most enjoyable part of their studies. Two students added:

> *Training shouldn't be in one place that has different technologies; we should have some kind of rotation to practise different skills in it.*

> *I think we should be introduced to the work placement location, the facilities it has, the systems it uses, and their methods of training, before we are sent for work placement training.*

In addition, the students were asked if they would like to choose their work placement organisation, since this was permitted to students that had a high Grades Point Average (GPA). Both males and females affirmed that they should be involved in choosing their work placement organisation, so that they will be creative and motivated to get trained. One male student said:

> *The department should choose the work placement training organisations according to certain criteria, they have the experience. Having ICT facilities and training should be the first criterion.*

The students were also asked if they were prepared to work, after graduation, in the different work placement organisations they had been trained at. The male students replied in the negative because some of these organisations are not technologically equipped, while others had "*low payment*" and "*no promotions*" especially school libraries. In addition, the females thought that they were not prepared because their skills were very basic and they had to improve their skills to get employed in such organisations. Two female students commented:

> *I think we need to do an advanced computer course as well as an English course and then we might be prepared.*
>
> *We need to have good English vocabulary to get employed.*

Work placement organisations need a range of resources to train students. It should at least have a technological environment where students are prepared to be trained. On the other hand students need to be prepared in terms of their skills and knowledge to choose their place of training and then successfully work in such organisations.

7.5.5.4 Work placement courses

The students also believed that the work placement course, being a nine credit course, is a lot to be taken in one semester; it should be divided into two semesters or even distributed among their four years of study so they can have more time of training. The employers supported this as they suggested increasing the work placement duration as it previously was, during the four years of LIS education, one comment referring to this:

> *Work placement training should be divided into the four years of LIS studies; as other LIS programmes have introduced in other universities where there is very intensive training.* (Employer)

The female students thought that "*the Seminar 485 course*[18] *has nothing to do with the work placement, although it should complement it*"; and that it's "*supposed to discuss problems and issues we (they) are facing during work placement*".

[18] Seminar/field training is a compulsory/vocational course, in which the student submits a detailed report on the work placement training and its practical implications in all courses. The report should also show the positives and negatives of the work placement training and

Nearly all the participants were concerned about the work placement training courses. They thought that the Field training course[19] and the Seminar course complementing it needed careful consideration in terms of credit, duration, and delivering the training objectives.

7.6 Job market skills needs

In order to cope with recent trends and work requirements it is necessary to improve the students' ICT skills according to the needs of the job market. This section will discuss the skills needed by the job market. The participants identified different skills needed by the Kuwaiti job market that LIS students required to work as professionals.

7.6.1 ICT skills

The participants, students and employers, highlighted that ICT skills were the most needed by the job market. The ICT skills they emphasised have been divided into subthemes and quotes referring are given:

Designing web pages

> *We need all of these skills in addition to designing a webpage, which is a must to provide web services.* (Employer)
>
> *(…) to be able to construct his library's homepage and market its services.* (Employer)
>
> *Designing a web page to market your library; I will be responsible for a library where I need to create a web page and market its services.* (Male student)

Searching information resources

> *To provide (…) searches through databases such as Science Direct and Dialog.* (Employer)
>
> *Searching information resources and using the online databases to search articles and information for the* teaching staff *and students.* (Employer)
>
> *Answering queries and searching for related information.* (Male student)

recommends solutions which are all discussed during a seminar to develop future performances.

[19] A nine credit work placement training compulsory/vocational course.

Searching information resources such as the available databases and software. (Male student)

Electronic cataloguing and classification

Electronic cataloguing is mostly needed. There is insufficient training and no specialised workshops in this field in Kuwait. (Employer)

There should be more courses and workshop that involve students' participation in things they are weak in such as cataloguing, classification, and searching information resources. (Employer)

Electronic classification of books and periodicals using MARC. (Male student)

Electronic acquisition

Electronic acquisition is really needed by employers. (Female student)

Knowing electronic acquisition to Locate and deal with vendors over the internet. (Male student)

E-communication

Communicating with peers in the field through the internet. (Male student)

Networking over the internet to communicate with users and professionals. (Female student)

Using software and electronic systems

We expect an employee to have all of these skills (previously defined), to use spread sheets to do the budget, and other administrative work. He has to have a good background of using a computer. (Employer)

We expect a librarian to know Word applications, Access, Power Point, and other library and information technology. (Employer)

Basic knowledge of automated library systems. They need to know how to apply what they know to any other systems they use. They should graduate knowing how to deal with and use different library systems. We need a LIS graduate as an information specialist he should be able to deal with technology, know what it is and what is going on. His job is to be able to improve his skills by coping with technology and reading. (Employer)

More than half of the focus groups participant stressed searching information resources and databases, e-cataloguing and e-classification, and using software and electronic systems as ICT skills mainly needed by the job market.

7.6.2 Other skills

Other non ICT skills were also identified by the three focus groups' participants. These were essential to work in the public sector. The skills were divided into subthemes and quotes referring are given:

Verbal and written communication skills

> "*Communication skills; writing, speaking, and reading. They should know the technological terms of their field; how to use and apply them to communicate with IT people"*. (Employer)

> *Knowing how to write a proposal, how to defend it, and market his ideas"*. (Employer)

Marketing skills

> "*Marketing skills; how to market yourself in the organisation. Because as a library or an information centre you're given the least number of employees and budget. They should be able to market themselves"*. (Employer)

> *"Giving presentations; being able to present ourselves and market our skills to others"*. (Female student)

Interpersonal skills

> *"Negotiation skills with vendors, employees, and decision makers.* (Employer)

> *"Personality skills such as: how to deal with users, working with groups, having initiative, and be approachable"*. (Employer)

> *"Having public relations; being able to negotiate to convince people and make decisions"*. (Female student)

Analytical and problem solving skills

> *"Analytical skills are important. Being able to analyse and solve problems"*. (Employer)

Project management

> *"Being able to start a project; project management such as planning a project and its implementation"*. (Employer)

Numerical skills

> *"Statistical analysis so they could produce, analyse reports, and then organise their work"*. (Employer)

Organisational skills

> *"The ability to organise and manage exhibitions"*. (Employer)

An employer, part-time teaching at the DLIS, thought that "*the curriculum does not offer any of this*" and that an "*employee will improve these skills eventually*". Another employer added that the "*important thing is to have the basics of all of these skills*". One more pointed out that some of these skills are taught as standalone courses in worldwide LIS programme. A further participant commented that students "*need encouragement and support from the department and from their previous education to build their personality skills so that they will be able to work in the job market and meet its needs*". One female student added:

> *We did learn new things at the department but our level in these skills is low in comparison to what is needed by the job market. We are weak in updating our skills to meet the needs of the job market.*

7.6.3 The private sector

The students were asked about their job opportunities in the private sector. The male students seemed optimistic about their employment. They preferred it because of "*salary and job title*"; "*career structure*"; they could be "*promoted at a better position*"; LIS graduates are needed there; and there is "*interest in the field*". Two females supported this, they thought that there is some direction towards employment in the private sector "*because of overtime payments and bonuses*" and because of the support from the new "*National employment law*"[20].

[20] The new National employment law in Kuwait has been changed in favour of Kuwaitis. It has set an obligatory percentage of Kuwaiti graduates to be employed in the private sector and expanded their rights of work; increased salaries, and increased their annual and public holidays.

On the other hand, four female students had negative attitudes towards employment in the private sector; they had fears about employment in that sector because of workload and less pay. They thought that "*employment there is because of certain criteria*" (for example English language proficiency) that they "*as LIS graduates do not have*". Their comments were:

> *Even if we get employed, there is no career structure. We remain "librarians" in the private sector. We have to possess certain skills to get employed and then get promoted.*
>
> *If the organisation goes out of business, you lose your job. It is more secure in the public sector.*
>
> *Kuwaitis are not going to the private sector because of the large number of expatriates employed.*
>
> *There is also more responsibility in the private sector, more attendance, and less holidays.*

LIS graduates need to have certain skills such as good English language and previous work experience to be employed in the private sector which is not the case in the public sector. Where as, these skills can eventually be improved in the latter, they are a must in the former.

7.7 Collaboration in curriculum design and implementation

The second issue discussed at the focus groups was collaboration in curriculum design and implementation. This included subthemes such as DLIS collaboration, barriers to collaboration, and strategies for effective collaboration.

7.7.1 DLIS collaboration

The employers were asked if they thought that they should be involved in curriculum design and implementation. All the employers agreed that this would improve the curriculum by incorporating their needs, developing work placement training, and promoting job opportunities. Three employers thought that they had collaboration with the DLIS but there was no evidence of this; no recommendations were made.

Moreover, all the students affirmed that collaboration with employers was necessary, except for one male who made no comment. The students thought that this should be done to achieve the following:

Exchange on the job experience

> *Exchange expertise and awareness on the latest developments in the field.* (Male)

Support work placement training

> *Training provided should be done according to collaboration between the DLIS and employers.* (Male)

Improve ICT skills

> *Employers' ICT skills needs should be sought. It should be then added into the curriculum and we should be trained on them during our studies.* (Male)

> *The DLIS should know their (employers) needs to improve our ICT skills.* (Female)

Update the curriculum

> *To include the new technology the public and private sectors are using, into the curriculum, which needs to be used in ICT courses.* (Female)

> *These organisations are using the latest technology. They will train us and employ us.* (Female)

> *Well if they want to be updated with the latest ICT skills, they should consult employers and know their needs.* (Female)

Other different kinds of collaboration were suggested by the participants. One female stated that collaboration "*should start within the college first; there should be collaboration between the DLIS and the library*". One male added that "*the library is downstairs and there is no regular collaboration between them and the DLIS*". One employer added:

> *There should be collaboration with the computer centre (the IT department) at the college in giving combined courses with the DLIS.*

One male student thought that collaboration between the teaching staff was needed to incorporate the ICT courses syllabus, he said:

> *ICT courses should be taught by specialised teaching staff with the help of teaching assistants. They should cooperate to put the courses' outlines and the practical teaching of these courses.* (Male)

Another employer suggested that collaboration should also be made between the Libraries Association of Kuwait (LAK), employers, and the DLIS to provide training and lectures in all aspects of ICT skills for students and professionals.

The participants suggested different ways of collaboration that the DLIS needed to have, such as collaboration with employers, LAK, the faculty's library, the computer department, and the teaching staff to reinforce work placement training, the curriculum, and students' ICT skills.

7.7.2 Collaboration in work placement training

Collaboration in work placement training between the DLIS and employers was suggested to improve the students' ICT skills. It will increase employment opportunities and provide graduates with an overall experience of the work practiced and skills needed. The students also recommended that this collaboration will introduce them to the environment of the work placement organisations and help them in deciding where to get trained, one female pointed out:

> *There should be an introductory course before we start work placement training. For example, training at the department and a presentation from the employer; this will encourage us to go for work placement training and it will help us in deciding where to get trained.*

One employer stated that students needed to be employed as part-timers in libraries and information centres during their work placement training, on which they are given course credit and/or payment.

7.7.3 Barriers to collaboration

Another question was whether there were any barriers to collaboration. The employers stated the following barriers:

- Lack of communication with the DLIS.
- No joint activities between the department and the employers.

- Governmental laws hinder collaboration (for example if an employee teaches at the DLIS as a part-timer he will not get a bonus from the organisation he works in as does a fulltime employee).

The participants affirmed the need for collaboration between employers and the DLIS. They indicated barriers to collaboration and suggested strategies to alleviate it, as in the next sub-section.

7.7.4 Strategies for effective collaboration

The employers suggested the following strategies to be adopted for effective collaboration:

- Organising conferences, workshops, and training sessions in collaboration with the DLIS.
- Having blogs, forums, and discussion groups with the DLIS.
- There should also be some kind of dialogue between employers and the department in sharing information on the teaching and training materials.
- Encouraging students participate in activities in and outside the department such as joining clubs or societies of employment organisations.

Collaboration should be achieved with regard to overall curriculum design and implementation and ICT skills improvement, including work placement training. It should be also achieved to reinforce work placement training; organise seminars, workshops and conferences; networking and communicating with private and public employment organisations; marketing employment opportunities for graduates; and forming shared awareness on the ICT skills needed by the job market.

7.8 ICT skills hindrance

The participants pointed out some deficiencies and factors that hindered the students' ICT skills improvement, as follows:

7.8.1 Lack of motivation

A lack of encouragement from family (including the unavailability of the ICT at home) and the DLIS (this includes supervision and oral encouragement from teaching

staff) has discouraged students from improving their ICT skills. One employer thought that the students' "*ICT skills are good if they were interested in working and were encouraged to use these skills and improve them*". The employers felt that students were not encouraged enough from the teaching staff to practise their ICT skills. Typical student comments were:

> *Some teaching staff encourages us to use technology by giving us assignments such as searching databases and then giving us credit on it, while others do not (…). Although the programme depends heavily on the use of technology, we are not encouraged enough to use it.* (Female)

> *No encouragement from teaching staff to use ICT due to the unavailability of it at home.* (Female)

The students felt discouraged to use ICT whether from their family or the DLIS. The gender issue dominates again here as females were less encouraged to use ICT at home. Besides integrating ICT skills into the curriculum, students should be motivated to use their ICT skills from both the DLIS and their families. This would encourage them to improve their skills.

7.8.2 No curriculum evaluation

The students thought the DLIS was not evaluating the curriculum regularly to add or change the courses it is currently instructing. They stated that their opinions had not been sought in this regard and there has been "*no changes, no collaboration among the teaching staff, the students, or the employers to know their needs*". Students comments related to this were:

> *There is no curriculum evaluation from time to time to nourish it and add new courses to it.* (Male)

> *No one in the department has asked us about our view regarding the curriculum, what we need, and our concerns.* (Female)

To adjust and adopt to new changes the curriculum needs to be evaluated from the points of view of students, teaching staff, and employers to foster new changes.

7.8.3 Lack of awareness of self-education

The female students and employers thought that the students were not educating themselves to keep up with new technology. In addition, two female students commented:

> *I think the problem is that we do not read we do not know what is going on, what the latest in technology is and what new things are been used worldwide.*
>
> *(…) lack of awareness of the importance of the use of ICT equipment in our daily lives as students.*

The gender issue re-emerged here. This could be due to the fact that females were engaged more than males in their social and professional life (for example being mothers and working at the same time) that they do not have the time to read. It could be also that male student were more aware of technology and were self educating themselves more than females.

7.8.4 Mistrust

The students stated that they were not trusted to use the ICT laboratory on their own. They were not given the password to use the computers or search databases, except during the time of the lecture. In addition, the females felt that they were not trusted to use the internet on their own whether at the DLIS or at home. This resulted in limiting the students' access time to use ICT.

7.8.5 Lack of library access

The female students complained about the library and its facilities. They commented that the faculty's library closes at 13:00[21] in the afternoon and they do not have enough access to it or to use its facilities. One female added:

> *The library has been refurbished two years ago. It is assumed to be a modern library (technologically). It has only four computers serving the whole number of students on campus and there are no study or discussion rooms for students.*

[21] The library operates during the College's regular working hours from 8:00am to 1:00pm it was sometimes extended to two extra hours at the male cohort.

The library and its facilities (including computers, software, study spaces, and opening hours) should be available for LIS students to perform their assignments. Using these facilities was not tailored to meet the students' needs.

7.8.6 Inadequate laboratories and budget

Similarly, the students thought the ICT laboratory was not equipped for the number of students admitted to the programme yearly. There are four laboratories, two in each cohort males and females, each has eighteen workstations. The opening hours of these laboratories were not suitable for the students and that whoever was "*lucky to get a working computer during the lecture benefits from the session*". An employer added:

> *The department should also provide the actual tools for training. They need to refurbish their labs with the latest technology and tools. Students should live in an encouraging environment to improve their technological skill.*

Employers and students thought that there was a lack in the availability of tools (such as hardware, software, library systems, and databases) that were used by the job market. The same tools were not used for training students at the DLIS. This was due to an inadequate budget to supply the necessary training tools.

7.9 ICT skills improvement

The participants recommended some changes and suggested ways to improve the students' ICT skills, discussed below.

7.9.1 Graduation project

The presentation of a graduation project based on the ICT skills learned and practised during LIS education and training will improve the students' skills. One of the employers suggested:

> *They should present a project to graduate; a real project. In which each student presents something useful using his ICT skills. The assignment should be reevaluated according to the training tools and resources available inside (in the DLIS laboratories) and outside the department (in work placement organisations).*

This project should be agreed upon between employers and DLIS. It should encourage students to apply their work placement training, ICT skills, and other skills they have acquired.

7.9.2 Reading and knowledge sharing

One employer suggested that "*students should improve themselves by reading, reading, and reading, they don't read. They should share the knowledge they have*". Another one stated "*let them learn and record what they learn and share it with others; knowledge sharing*". A female student also added that students "*should be kept informed of all the new technological advancements of the field by giving us assignments and taking us on field trips*".

7.9.3 Students' employability

The employers suggested employing students during their LIS education, treating them as employees to improve their ICT skills and to guarantee they get valuable benefit. Comments referring to this were:

> *Students can work as part timers to improve their skills, in which they are paid, trained, and then graded.*
>
> *Train students in the colleges' library and pay them at the same time.*

Employment organisations would also benefit from this; it would decrease the workload on their employees and would market them as employment organisation for the LIS field.

7.9.4 Subject specialist

One employer recommend that *"students can specialise in one or two of the skills, such as cataloguing and classification that are needed by the job market starting from the second year of their studies"*. The students respondents also supported this view they thought that subject specialisation would provide them with better opportunity to improve their ICT skills.

7.9.5 Admission requirements

Two employers thought that the DLIS should change its entry requirements and add new standards for new admissions to the programme. This should be done to "*accept a better quality of students*" for example "*increasing the students' GPA and having a skills test or a TOEFL*".

7.9.6 Educating the public

Three employers suggested that "*there should be awareness programmes of the job title and duties of a librarian*" and in "*educating the public*" in this regard. Another one thought that "*salaries are low because of the job title; he is viewed as a librarian a "book keeper" by the public*". The students added:

> *The problem is the view of the public to "librarians" not everyone knows what the field is.* (Male)
>
> *The profession is respected in other countries but not in Kuwait.* (Male)
>
> *A librarian "ameen mektaba" is perceived to be a bookkeeper that is what the society think.* (Female)
>
> *(…) the public view of a librarian. I think the job title is wrong it needs to change to an information specialist to reflect what we do. This will increase our employment status and payment.* (Female)

The need to change the perception of the public to the different duties of a librarian and the diverse organisations he could be employed in, including the private sector, such as banks and information centres. This would also change the job title giving LIS graduates better chances of employment in the private sector.

7.9.7 Curriculum review and evaluation committee

One employer suggested that the DLIS should have a curriculum review committee. Its members should represent employers, teaching staff, and students to be consulted in curricula changes, she stated:

> *A specialised committee should be arranged for this. It should be responsible for collaboration in different issues of the programme. Its members should consist of representatives from the public and the private sector. It should meet on a regular basis representing the DLIS and employers. Students could participate in this, at least in collecting the*

> *inputs, it would develop their experience in communication, writing reports, and working towards the recommendations.*

Employers also suggested having an evaluation committee "*on each student's performance and on the overall training of students*". It should evaluate students "*on their skills and their progress. It should grade them on their skills and the training they need*".

7.10 Conclusion and main findings

In this chapter, qualitative data of the focus groups were presented according to the themes and sub-themes that have emerged from it. The focus groups were useful for gathering different perceptions of the research topic from the employers and students. It has revealed useful ideas and recommendations for the improvement of students' ICT skills, ICT skills teaching and learning environment, the needs of the job market, collaboration as a solution, and pointed out the factors that have hindered ICT skills learning. Participants made recommendations and suggestions regarding the improvement of ICT skills teaching and learning.

The main findings of the focus group data analysis suggested that the participants had an understanding of ICT. The majority of the participating organisations were practising ICT skills, but some were not automated. It was indicated that males used ICT when they were assigned to whereas females used them more often for different daily assignments. LIS students graduated with some ICT skills knowledge which they improved after employment; females made more positive responses than the males on the skills they had learned and on their ICT skills strength; the students pointed out weakness in their ICT skills; and even though male students felt negative about their ICT skills, but they were indirectly making use of them.

Moreover, the participants thought that the DLIS should train students using the latest technology and tools to prepare them for their professional life. In order to complement the needs of the job market and improve the students' ICT skills, the participants suggested that the ICT curriculum needs to be updated with new courses; unified with the same syllabus; have the same ICT education within the two cohorts (males and female); have all the ICT courses as compulsory instead of being

electives; integrate the use of the English language; and there was also a need to have qualified teaching staff with ICT skills.

The focus groups' participants showed the need for a new written plan that needs to be followed as guidelines to improve the students' ICT skills training. However, since the students felt that they were not properly prepared to work in the work placement organisations, they suggested to have some kind of organisation between the DLIS and work placement organisations; they should be trained at the most technologically advanced organisations; they should be involved in choosing their work placement organisation; and work placement courses needed careful consideration in terms of credit, duration, and delivering the training objectives.

In addition, the participants identified different ICT skills needed by the Kuwaiti job market that LIS students required to work as professionals. Other non skills were also identified and considered essential to work in the public sector, such as verbal and written communication, marketing, interpersonal, analytical and problem solving, project management, numerical, and organisational skills. The students had different views regarding their employment in the private sector; male students seemed optimistic about it while females felt pessimistic because of "certain criteria" they did not possess.

The participants suggested having collaboration in curriculum design and implementation between the DLIS and LAK, the faculty's library, the computer department, and the teaching staff to reinforce work placement training, the curriculum, and students' ICT skills. Collaboration in work placement training between the DLIS and employers was also suggested to improve the students' ICT skills; increase employment opportunities; provide graduates with an overall experience of the work practiced; introduce them to the environment of the work placement organisation, and help them in deciding where to get trained.

However, deficiencies and factors were found that negatively hindered the students' ICT skills improvement, such as: lack of motivation, no curriculum evaluation, lack of awareness of self-education, lack of training, mistrust, lack of library facilities, and inadequate laboratories and budget.

Finally, participants recommended some changes and suggested ways to improve the students' ICT skills, such as the presentation of a graduation project; encouraging students to read and share their knowledge; employing students (part-time) to improve their ICT skills and to guarantee they get valuable benefit; having subject specialisation from the second year of LIS education; changing the entry requirements of the programme; educating the public about the "job title and duties of a librarian": and having a curriculum review and evaluation committee. The next chapter will present the outcomes and discussion of the analysis Chapters Five, Six and Seven in relation to Chapter Two, the literature review.

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Chapter Eight: Discussion

8.1 Introduction

The aim of this research was to explore the ICT skills of LIS students in Kuwaiti Higher Education that are needed by the Kuwaiti job market. To achieve this aim, the objectives, research questions, and methodologies were used over two stages to collect relevant data.

In stage one both qualitative (interviews) and quantitative (questionnaires) were used simultaneously. The 54 semi-structured interviews gathered in-depth data from employers, teaching staff and students on ICT skills and ICT courses taught; the teaching and learning environment; the needs of the job market; and positive and negative factors influencing the improvement of students' ICT skills. Thus, the first research objectives (to identify the current level of the students' ICT skills), the second (to identify the main factors influencing students' acquisition of ICT skills), the third (to identify methods of teaching and training ICT skills and compare them with ones preferred by students), the fourth (to identify LIS graduate ICT skills needed by employers), the fifth (to investigate the current ICT courses in terms of gaps in teaching and market needs), and the second research question (what are the factors affecting students' learning ICT skills?), the third (what are the ICT skills that employers expect from LIS graduates?), the fourth (What are the students' ICT skills training needs?), and the fifth (what form should ICT training take to develop ICT skills among all students?) were partly met in Chapters Five (interviews analysis) and will be further discussed and investigated in this chapter.

The questionnaires and interviews were conducted at the same time (except for the students' interviews that were conducted after they responded to the questionnaire) by providing explorative data on the students' ICT skills level in relation to other variables such as gender and year of education. Accordingly, the research objectives one, two, three, five, questions one (what is the students' current situation regarding learning ICT skills), two, four, and five were to some extent met in Chapter Six (questionnaire analysis) and will also be further explored and discussed in this chapter.

In the second stage of the research a qualitative method (focus groups) was used to produce more in depth data and also to verify the data gathered through the first stage. Three focus groups of employers and students helped to explore and verify issues relating to the students' ICT skills; the job market ICT skills needs; collaboration with employers; ICT skills teaching and learning environments; and ICT skills hindrance and improvement. This was achieved through the research objectives: one, two, three, four, five, questions: two, three, four, five, and was to a degree met in Chapter Seven (focus groups analysis). In this chapter, the findings of the focus groups will be discussed in relation to the findings of Chapters Five and Six.

This chapter discusses the results of the three methods used in this research. The results of the interviews (Chapter Five), questionnaires (Chapter Six) and focus group (Chapter Seven) are presented in the light of the research literature (Chapter Two) and the background data on Kuwait (Chapter Three). Those factors that negatively influenced the students' ICT skills improvement are highlighted and ways of improving ICT skills are suggested. In addition, the DLIS curriculum courses descriptions and organisational web site were analysed and examined in depth to provide further interpretation of the situation.

8.2 ICT skills

The participants' familiarity of the term ICT, level of ICT skills, ICT sources of learning, and employers' need for ICT skills were explored. These are discussed in the following sections.

8.2.1 Awareness and literacy of ICT skills

Although the research participants (employers, teaching staff, and students) lacked a common understanding of the term ICT skills, they showed an understanding of the term when they answered other related parts of the interview questions (such as about the ICT skills they practised). The students also showed an understanding of the term when they completed the questionnaire (the definition was attached), when the majority (71%) indicated that they had an "intermediate" ICT skills level, and had an awareness and knowledge of the definition. This was confirmed in the focus groups, where the participants showed a full understanding of the term.

It was also found from the interviews and the questionnaires that the largest group (40%) of the students had learnt how to use ICT equipment from their previous education. The students came with basic knowledge of office applications (such as Microsoft Word) and Internet searching skills (such as basic keyword search), learned through primary and secondary school education. The qualitative results, however, indicated that the students lacked advanced searching and internet navigation skills (such as using Boolean and truncation). A possible explanation for this is that the students did not get enough training during their previous studies to prepare them for higher education requirements. This could be due to the level of the overall teaching at the secondary schools at Kuwait which was reported to be low (Sharaf 2006, p.105). However, the students indicated that they were ready and seemed enthusiastic, to improve their skills through LIS education.

Moreover, in order to reduce ICT illiteracy in Kuwait, the National Profile of the Information Society of Kuwait stated that the Ministry of Education (ME) has provided computer laboratories and curricula at all the academic levels. Cooperative societies are offering basic ICT training sessions and summer camps are being organised to teach young children computer use. In addition, training employed and unemployed citizens on the ICDL to become information literate (United Nations Economic and Social Commission for Western Asia 2009, p.4), has been taking place. However, the impact of this is yet to be seen.

8.2.2 Students' current ICT skills level

One of the objectives of this research was to identify the current level of the students' ICT skills. The results of employers' and teaching staff interviews revealed that the students in the 4th year had better ICT skills than those in their 1st year. The quantitative data of the questionnaires supported this; it showed that the majority (71%) of the students perceived that they had an "intermediate" ICT skills level, the majority (73%) of whom were in their 4th year. This was expected because these students have had ICT courses and training.

However, the focus group data differed. Employers thought that the students' ICT skills were "low" and that they did not have enough ICT skills when they came for work placement training, usually during their last year of studies. This point of view

recognises that the students may have had good basic ICT skills (as was indicated by the results of the interviews and questionnaires) but they were not recognised as sufficient by employers (they represented the organisations that most employ LIS graduates).

The percentage of students that had a "proficient" ICT skills level was 14%, which was not encouraging. This means that the rest (85%) of the students did not have enough ICT skills and they rated their skills level as "intermediate" and "beginners". It was interesting, however, to find that 15% of the students were "beginners" at this time (according to their ages from 18-22 and being LIS students) whereas ICT usage has become an essential daily tool. One can conclude, therefore, that they did not get enough training from either their previous education or their LIS education. This is not surprising since, as mentioned (Chapter Three background on Kuwaiti education); the implementation of ICT into the curriculum was delayed due to the Iraqi invasion that affected the country in 1991. ICT education was not fully implemented until 2004, when an implementation of a joint programme for the development of ICT in Kuwaiti schools started (Ministry of Education Kuwait National Commission for UNESCO 2004, p.57). In addition, an ICT compulsory course at academic institutions including Kuwait University and Public Authority for Applied Education and Training only started in the academic year 2006-2007 (United Nations Economic and Social Commission for Western Asia 2006, p.6).

8.2.3 Source of ICT skills learning

There was some disagreement about the sources of ICT skills learning among the students. The quantitative data suggested that the majority of the students learnt from their "previous education" (first option) and on their "own" (second option) through trial and error. This finding is consistent with the finding of Ur Rehman and Mohammad (2002, p.11), who reported that almost half of the undergraduates at KU had acquired their computer skills independently and through friends.

The 1st year students revealed that they had learned least from "LIS School", but they had been there for the least time. This could be due to any of the following reasons:

- The lack of ICT courses for students in their 1st year, detailed in section 3.5;

- the students were learning from their "previous education" and on their "own" more than from "LIS school";
- previous school education was inadequate in providing students with enough ICT skills or the student did not get formal training during that period;
- the students did learn ICT skills but they were not enough at the higher education;
- they were not motivated (encouraged) at the DLIS to learn, detailed in section 3.2.1;
- or they might have already known these skills on their "own".

The 4th year students had "LIS School" as their third option of source of learning, whereas one would expect it to be their first choice. This indicates that ICT courses at the DLIS were not delivering the ICT skills that the 4th year students needed.

The questionnaire data also revealed that the majority (43%) of the students would "sometimes need assistance" when they used ICT equipment, while 39% used ICT on their own. This shows that those students (39%) did not ask for assistance when they used ICT. It also implies that either they knew how to use ICT equipment on their own or they did not want to ask for assistance. 74% pointed out that they would ask their "friends" for assistance when needed. This is similar to the finding of Smith and Hepworth (2005, p.46), who found that students of all ages used their friends to search for information. However, this is a concern because their friends may not have had the proper training themselves and had probably learnt through trial and error.

8.2.4 ICT skills proficiency

The interviewees (employers, teaching staff, and students) stated that database maintenance and web page construction skills were not practised by students. This was also confirmed by the results of the questionnaires data where the "maintenance of in-house databases" (ranked fifth out of six ICT skills) and "design and develop web pages" skills (ranked sixth) received the lowest rates. On the other hand, the "search and retrieve information from internet" was rated as the top skill the students achieved and the "use of office applications" was rated as the second, although they were basic, as discussed in section 8.2.1. This is equivalent to the finding of Abu

Bakar (2005, p.271), who found that the use of Microsoft Word and the use of different features of word processers (such as printer control, mail merge, and others) in Malaysia were rated as the top two basic skills for professionals working in almost all LIS areas. In fact, these skills are considered as basic ICT skills requirements for anyone in all other fields.

The quantitative data revealed that the students had an awareness and knowledge of other skills but had different levels of each skill. They possessed "internet searching" (88%) followed by "emailing" (45%) and "office application" (43%) skills. These findings are similar to those of Samuel et al. (2004, p.5), who indicated that the Internet, including email, was the mostly used common ICT application among 4th year medical students in Tanzania. And by Mahmood (2002, p.35) who found that using relevant ICT applications (such as email, Internet and others) was listed as one of seventy-five skills needed for future academic librarians in Pakistan. Ur Rehman and Mohammad (2002, p.11), also found that the Internet followed by email and word processing were the mostly used computer functions by undergraduates at KU.

The quantitative data suggested that "database searching" was practised by 28%, "library catalogues searching" by 25% and "web page design and construction" by 10% of the students, reaffirming the previous results of the interviews. This indicates that 70% of the students did not know database searching, 75% did not know how to search library catalogues and 90% did not practise web page design. This could be because these subjects were not taught as standalone courses or they were taught in one cohort but not the other.

Qualitative data of the focus groups revealed that the students also lack e-cataloguing and e-classification skills, capturing the right information and online database searching skills. This is concerning since, Lesher and Abdel-Motey (2002, p.12) found that computer applications and cataloguing and classification skills were ranked as the top two areas of specialisation needed by LIS employers in Kuwait.

In general, the qualitative and quantitative findings indicated that LIS graduates lacked the following skills they needed to practise as professionals:

- Database searching and maintenance.

- Web page design and construction.
- Electronic cataloguing and classification skills.
- Information searching and retrieving skills.
- Using library automated systems.

Similar findings were reported by Marouf and Ur Rehman (2007, p.206), when they recommended the need to strengthen the MLIS graduates' skills in ICT in Kuwait, cataloguing skills and the management of electronic resources. Also similar results have been found in other developing countries[22]. Ocholla (2001, p.153) found that LIS graduates in the University of Zululand lacked computer skills, database management, online cataloguing, classification, library computer skills and the use of computers for searching and retrieving information. Rehman and Marouf (2008, p.19), stressed the need to cover and intensify the cataloguing component in work placement training in the MLIS programme in Kuwait.

8.2.5 ICT skills and the needs of the job market

Another objective of this research was to identify the ICT skills needed by employers. Feather (2003, p.5) stated that in order to have new graduates with relevant knowledge of information management or librarianship and to prepare them for employment, "we need a meaningful discussion between employers' representatives, the professional bodies and education providers about what skills and qualities are needed now and for the future". The role of employers is to try to foresee their needs of LIS graduates and work with LIS educators to change the curriculum (Minishi-Majanjaa 2007, p.10).

Employment at the private sector was preferred more by male students than females this could be to the fact that females had more family commitments and responsibilities. However, although the students' focus groups indicated that they were more interested in employment in the private sector than the public sector due to better payment and bonuses, job title (if employed as information specialist) and career structure, they had less employment opportunities there. This finding is similar

[22] Although Kuwait is a rich economy country unlike developing countries in Africa and Asia, it is considered as a developing country in terms of education and providing its resources and facilities. However, it has been compared with other developing countries because it shares the same deficiencies and problems in LIS undergraduate education.

to that found by Miwa (2006, p.23), who stated that graduates with ICT skills in Asia seek for job opportunities in the private sector due to higher salaries and better conditions than those offered at libraries.

Nevertheless, according to the public sector employers' LIS graduates were not seeking employment opportunities in the private sector because of the job status and because they lacked the appropriate skills. They are employed there as "librarians" and this affected all the following:

- less payment, when compared with the public;
- more working hours;
- graduate lack employment skills such as ICT skills and English language proficiency;
- work load;
- no career structure for LIS graduates;
- insecurity of career when the organisation goes out of business;
- expatriate employment;
- more responsibility;
- and previous experience is required.

The interviews' findings indicated that the employers and teaching staff agreed that the students' ICT skills were not sufficient for the needs of the job market. Similarly, Marouf and Ur Rehman (2007, p.207) found that LIS employers in Kuwait wanted LIS graduates to have additional ICT skills.

LIS graduates with strong ICT skills are in demand in both the public and the private sectors these skills can be effectively integrated in LIS education (Minishi-Majanjaa 2007, p.10). Employers, however, expected graduates to work as "information professionals" and to have at least all the skills mentioned in the ICT skills definition. In addition, they wanted staff to be able to use library systems, search for information, navigate and use advanced search engines on the internet; use the internet as a communication tool; know the automated procedures in the library; and to be able to use and maintain databases. The private sector employers also suggested that students should possess more advanced ICT skills such as familiarity with web

2.0[23], be able to use metadata[24] (to easily search and retrieve information), and be able to apply MARC 21 and AACR2 cataloguing standards. This was supported by most of the focus groups' participants who stressed that searching information and databases, e-cataloguing and e-classification, and using software and electronic systems were the ICT skills mainly needed by the job market. They commented that graduates with subject specialist skills and cataloguing and classification were preferred in employment.

Surprisingly, only 25% of the students related their need to improve their ICT skills because of job opportunities. Ocholla and Bothma (2007, p.75) indicated that continuing education is important because it keeps professionals updated and current with their practices. However, the majority (62%) of the students indicated that they improved their ICT skills to "continue their education". A similar finding was reached by Lesher and Abdel-Motey (2002, p.10), who found that 121 (out of 463) LIS students, at the CBE Kuwait, wanted to continue their education. The explanation of this could be because students are currently aiming to pursue their higher education to earn a Master or a PhD, since education is provided free or on scholarship basis in Kuwait. On the other hand, Miwa (2006, p.23), stated that LIS students in Asia are getting higher degrees because they were interested in attaining them.

8.2.5.1 Other employment skills

The qualitative data suggested that LIS graduates should also possess other skills in addition to ICT skills. The employers' (private and public) and teaching staff indicated that students should have the following skills:

- Analytical thinking skills
- Human soft skills (such as management skills and communication skills)
- Attitudes skills (such as using their initiative, being responsible and approachable)
- Teamwork skills

[23] Technologies used such as writing tools (blogs and wikis), presentation tools (creating slides and mind mapping), organising tools (time management and RSS feeds), community tools (professional networks and discussion lists).

[24] Metadata is structured data which describes a resource. A websites metadata are the keywords used to describe it for retrieval through search engines.

- Problem solving
- Verbal skills
- Marketing skills
- Interpersonal skills (such as negotiation skills)
- Project management
- Numerical skills
- Organisational skills

These findings agree to some extent with what was reported by Audunson, Nordlie and Spangen (2003, p.197) in Norway that students should improve analytical skills, communication and strategic thinking skills. And with Blankson-Hemans and Hibberd (2004, p.277) who added marketing, budgeting, and financial management skills. This also corresponds to the findings of Mahmood (2002, p.35), who found that "demonstrating good interpersonal skills" and "writing communication skills" were among the ten skills need for future librarians in Pakistan. In addition, Marouf and Ur Rehman (2007, p.201) also highlighted the need for teamwork, interviewing, presentation, social relationships, public relationship, and marketing skills of MLIS graduates in Kuwait.

8.3 Factors negatively influencing ICT skills improvement

Another objective of this research was to identify the main factors that have negatively influenced students' acquisition of ICT skills. Different factors were determined from the qualitative and quantitative data.

8.3.1 Teaching and learning context

The teaching and learning environment at the DLIS was investigated through the qualitative and quantitative data. This was done to seek out the degree of training provided, teaching methods used for instructing the ICT courses, and the ICT courses taught. The findings suggested weaknesses in these areas and factors such as time and lack of trained teaching staff. The lack of English language proficiency and work placement opportunities also imposed limitations. The following sub-sections will discuss this in detail.

8.3.1.1 Lack of training

Minishi-Majana (2007, p.6) stated that LIS schools need to increase the practical training of their courses. Blankson-Hemans and Hibberd (2004, p.280) recommended more practical practice for the improvement of LIS students' skills. The results of the questionnaire showed that the main problem faced by the students was "not enough training provided by the DLIS" (ranked as the first option). The majority of the students also did not think that the practical training provided at the DLIS was "sufficient", their responses ranged from "insufficient" to "sufficient" "1" to "3" using a six-point semantic differential scale. This was also supported by the qualitative data of both the interviews and the focus groups. Data from the interviews showed that students were not well trained to practise their ICT skills during their LIS education due to the following:

- concentration on theory rather than practical training (section 3.1.5);
- training students in Arabic and not using the English language (section 3.1.6)
- little use of ICT or non use of it in traditional LIS courses;
- inappropriateness of the ICT courses (section 3.1.5);
- traditional methods of teaching (section 3.1.2);
- insufficient time to train students (section 3.1.3);
- the dated ICT skills of teaching staff (section 3.1.4);
- and inconsistent training.

Findings of the interviews suggested that the 1st year students lacked ICT skills because of their previous education training. A similar finding was found in Kuwait, where graduates lacked ICT skills due to its lack in their earlier education (Al-Anzi 1995). However, the 1st year students still had time and opportunity to improve their ICT skills through their LIS education. Nevertheless, the interviews and focus group data indicated that although the 4th year students had improved their ICT skills during LIS education, they needed more training and the current LIS ICT education alone was not enough to improve their skills to meet the needs of the job market. The same finding was reached in an earlier study of the training of LIS professionals in Kenya (Kavulya 2007, p. 217). It found that LIS training programmes do not address the needs of the job market.

The interviews data suggested that the following were required to improve the students' ICT skills:

- provide self training programmes and workshops;
- concentrate on practical training through ICT courses and work placement;
- include ICT courses with intensive training;
- assign students to use the laboratory and library ICT facilities.

8.3.1.2 Teaching methods

Another objective of this research was to identify methods practiced to teach ICT skills and compare them with ones preferred by students. The interviews indicated that the teaching staff were using various teaching methods to teach students during the ICT courses, such as traditional lectures using the blackboard, Power point, projector, data show, and demonstrations; field visits; group training sessions; short tests; online information resources and database searching; assigning students practical exercises and research; handing in assignments electronically; organising presentations; and working in groups.

The questionnaire survey showed that out of a list of five, the most preferred training method by students was "group training" (36%). The majority of the students chose "group training" as their preferred method of training. This could be because they were learning from one another or because they were already experiencing this method at the DLIS or it gives them opportunities to socialise and network. This finding concurs with that of Luan, Abu Bakar, and Hong (2006, p.232), who stated that students in an IT course working in groups in Malaysia felt at ease and got support from their peers.

The next preferred training method by students was "one-to-one" (19.7%). This could be due to the reason that the training can be adapted to the students' needs. It also gives the students more opportunity to ask questions and get training on the specific skills that they needed. This method was not practised at DLIS but was mentioned during the interviews' analysis as a preferred method by the teaching staff. It is, however, quite labour intensive. Survey results of Hanson-Baldauf and Hassell,

(2009, p.9) supported this, and indicated that face-to-face and online learning methods improves skills using ICT tools and prepares students to incorporate technology.

According to the teaching staff online courses were not preferred due to the students' low ICT level, the unavailability of tools and they (teaching staff) preferred students to attend lectures. They also indicated that some teaching staff did not have the skills to use online training. Moreover, while both the teaching staff interviews and the questionnaire showed that "online training" was not preferred by students, it was pointed out by the focus group employers to be utilised to train students at the DLIS. But the focus group employers may not be aware of the teaching staff ability and the available facilities to provide such option.

It was suggested by the teaching staff interviews and employers' focus group and students' questionnaire that other methods of training should also be used to improve the students' ICT skills such as:

- inviting guest speakers and ICT experts;
- providing open classes and one-to-one training;
- assigning students more course works;
- and applying self-study to advanced levels of ICT courses.

8.3.1.3 Lack of time

Respondents of the interviews (teaching staff and students) agreed that the restricted opening hours of the ICT laboratory was a factor that affected the students' ICT skills improvement. As a result, the students complained of not having enough time to practise their ICT skills. The quantitative data participants also mentioned that having coursework and exams were factors that hindered their ICT skills improvement due to the lack of time. In addition, the teaching staff complained of time shortage. Accordingly, for the same reason, the students indicated that they were not trained sufficiently.

The lack of students' time management (not having the time to practise their skills due to assignments and having other responsibilities such as family) to improve their

ICT skills was also mentioned by the focus group. Results also confirmed that students were critical of the time that was given to their training.

8.3.1.4 Unqualified teaching staff

It was stated that the success of a programme depends on the quality of the teaching staff, being carefully selected to have good professional qualifications and experience (Kavulya 2007, p.220). The interviews' data indicated that the teaching staff were not updating their ICT skills and some lacked them. Lutwama and Kigongo-Bukenya (2004, p.104) revealed the same finding at the LIS programme in Uganda, where they found that some of the lecturers did not have the experience to teach ICT. Also Minishi-Majanjaa and Ocholla (2004, p.193) reported that some LIS schools in Africa did not offer ICT courses because of the lack of teaching staff proficiency.

The focus groups results indicated that some teaching staff were experienced in using ICT while others were not. The questionnaires results also supported this as "not enough teaching staff" (to teach the ICT courses) and "teaching staff lack ICT skills" were both ranked as the fourth options out of a list of ten (Chapter Six) difficulties faced by respondents. This aligns with the results of Abdel-Motey and Al-Anzi (2003, p.49), who found that 71% of the teaching staff at the CBE, Kuwait, needed internet training, although most of them were already internet users. The obstacles preventing them from using the internet were shortage of time, weakness of their ICT skills, and the lack of English language proficiency. Anwar and Al-Ansari (2002, p.237) also reported that in general GCC professionals lacked English language skills as a result they lacked good research and writing skills. Further, Ur Rehman and Al-Ansari (2003 p.177) found that 87% of the teaching staff at the GCC countries had not contributed to the literature in English and their contribution to the Arabic literature was also weak.

This research did not seek to find out the specific level of ICT skills of the teaching staff, it only explored whether they had ICT skills or not in general and if they were updated. When the teaching staff were asked about updating their ICT skills, their replies conflicted with the results of the students' and employers interviews, focus groups, and questionnaires. They revealed that they (the teaching staff) were, in fact, all updating their ICT skills, except for one. However, further investigation was

needed to identify their specific ICT skills level. This could be ascertained in future research.

Moreover, only 18% of the students (13% from the 1st year and 26% from the 4th year) indicated that they would ask their "teachers" for assistance. This could be due to the lack of teaching staff during students' ICT use; the lack of confidence in the teaching staff's ability to provide help; the students being afraid to ask for help; or the students not knowing that teaching staff can offer help, especially those in their 1st year.

It was expected that all the teaching staff would have a good level of ICT skills and were up-to-date with ICT technology. It appeared, however, that the ICT skills of the majority were outdated. This could be due to the lack of practice in using such applications and/or due to teaching loads. The student teacher ratio was reported of 1:33 (Ur Rehman 2007, p.8) at the DLIS, which is high compared to 1:19 in UK (University and College Union 'Further, Higher, Better' 2006, p.1).

This also raises the issue whether or not the teaching staff were taking regular courses in order to improve their ICT skills to be skilled in the latest advances of the technology. The interviews data also indicated that although the teaching staff were taking courses to update their ICT skills and some sought training at their own expense, these were not mandatory by PAAET.

8.3.1.5 ICT courses

A further objective of this study was to investigate gaps in teaching ICT skills and not meeting needs of the job market. The qualitative and quantitative data identified barriers that hindered ICT skills improvement. These included:

8.3.1.5.1 Courses content

The inconsistency of the curriculum (a lack of balance between theory and practical training) was reported. Teaching at the DLIS was more theoretical than practical work. Lutwama and Kigongo-Bukenya (2004, p. 104) reported the same findings at the LIS programme in Uganda, that 87% of the respondents were not satisfied because teaching tended to be theoretical. Hallam (2006, p.49) in Australia, however,

recommended combining theory and practise in LIS courses in accordance to the emerging needs, where there was a move from the traditional lecture to workshop format and to intensive full days programme. In addition, it was recognised by the respondents that the ICT courses' content did not reflect the needs of the job market and were outdated. A survey of LIS professionals found similar problems in LIS courses in Kenya. The courses were irrelevant to the needs of the job market because there was inadequacy in: teaching resources; ICT courses content; and length of courses (Kavulya 2007, p. 220).

However, when the students were asked about the theoretical teaching of the ICT courses provided by the DLIS, it appeared to be insufficient as indicated by most respondents. Their responses ranged from "1" to "6" "sufficient to "insufficient" with a mean of 2.52 for the 1st year and a mean of 2.63 for the 4th year. The qualitative data suggested that there was more theoretical than practical work, results of the quantitative data also indicated that the theoretical teaching of the ICT courses was "insufficient". Consistent with this finding was that of Lesher and Abdel-Motey (2002, p.12), they found that 64% of the students at the DLIS, CBS, indicated that the programme needed to stress on computer applications in its course.

"Not enough courses offered" (52%) was the second, out of ten (Chapter Six), most critical comments about content students made. Moreover, providing "intensive ICT courses" was the third option, out of five, that the students indicated as a preferred way to improve their ICT skills training, 21% of them were in their 4th year reinforcing this view, since they had a full experience of the programme.

8.3.1.5.2 Un-unified syllabus

Un-unified courses' outlines; a course had different outlines. Even though the course was taught at the same cohort (female or male), it had two different syllabus. This could be due to not having a clear policy at the DLIS to stick to the syllabus or the teaching staff were each teaching the courses differently without collaborating or/and knowing what they are teaching. This resulted in that the structure of the courses was felt to not complement one another in terms of progress.

Moreover, the courses were taught to one cohort but not the other. Some of the ICT courses were taught to male but not to female. This could be due the deficient number of ICT teaching staff and the lack of qualified ICT teaching staff (discussed in section 8.3.1.4).

To improve the students' ICT skills the participants suggested adding a variety of ICT courses into the curriculum such as an intensive ICT course; introduction to computer networking; library automation; web page design (as a standalone course), information searching, database design and development, internet applications, and information analysis and retrieval. This is in accordance with the findings Blankson-Hemans and Hibberd (2004), who reported that ICT courses should be included into the LIS curricula to meet the needs of the job market. Other suggestions the participants had included: teaching ICT courses from the first year, since students took these courses after their second year; changing the content of the ICT courses because their content was outdated; having the same syllabus with clear courses' outlines and within the two cohorts; the same ICT education should be delivered between the male and female cohorts; and having the ICT courses block all as compulsory. In support of this argument, a similar survey on the graduates of the MLIS programme in Kuwait indicated that the core courses had similar drawbacks. Respondents commented to give more credit to the e-cataloging components; the need for stronger electronic courses with hands-on training; and the need for more practical training (Ur Rehman & Marouf 2008, p.19).

8.3.1.6 English language

The lack of English language proficiency was found to have hindered students from improving and learning ICT skills. The qualitative data from the interviews and focus groups revealed that this factor affected the students' searching capabilities (such as searching databases), using library systems, and learning other skills (such as communication). It was found that the students lacked English terminology to use in their daily conversation and apply in their every day LIS studies. The lack of English has also hindered access to the private sector, where it is a necessary qualification. It caused non-collaboration with that sector. Since students lacked English, the private sector had no interest in training students or employing them.

Proficiency in the English language was not included in the questionnaire as a difficulty faced by students. It was assumed that these students were taught English from secondary school and that they would not still have English language difficulty at the higher education level. However, the qualitative data in the questionnaires indicated that the students found the English language as one of the "other" difficulties they faced. Ur Rehman and Mohammad (2002, p.17), found that mature students and those who went to private schools in Kuwait had better English language proficiency and were better able to use the library resources.

The qualitative data (employers' interviews and focus groups) provided some recommendations to improve the students' English language such as:

- Providing an ICT foundation course with a concentration on the English.
- Learning searching skills in Arabic and then applying it in English.
- The inclusion of an intensive English course to the LIS programme.
- English language should be tested by having an entry test such as the Test of English as a Foreign Language (TOEFL).

This point was also emphasised by Lesher and Abdel-Motey (2002, p. 19), who recommended the promotion of English language proficiency at the DLIS, since the MLIS programme at KU is instructed in it. As this would improve the students' English level at the BA and then they could easily continue their higher education which is usually instructed in English in Kuwait or abroad.

8.3.1.7 Work placement

Although work placement training at DLIS represents the practical part of the ICT courses, the findings of the qualitative data indicated that duration of work placement (one semester) training at employment organisations was insufficient to improve the students' ICT skills. This is consistent with the finding of Aina and Mohi (Aina, Moahi 1999b, p.224) which suggested that students of the diploma programme in Botswana found the practical placement course irrelevant due to its time duration.

In addition, work placement courses needed some consideration from the DLIS in terms of credit, duration, and delivering the training objectives. In fact, since

employers were spending their time training students and work placement represented a nine credit course, employers thought that work placement training should be taken more seriously. In this regard, the Dean of the College of Basic Studies (CBS) issued a declaration to organise a committee that would make policies to cooperatively develop work placement training with the different departments in the college (Kathem 2008).

Moreover, the qualitative data indicated that students preferred to choose their work placement organisations and that these organisations should be well equipped to accommodate the students' training. This is consistent with the findings of Kavulya (2007, p.220), who found that work placement training organisations should be carefully selected to present students with the "right information work practises and information technology". Marouf and Ur Rehman (2007, p.202) also recommended that LIS students should practise their work placement in the private sector to provide them with the needed skills by this sector.

The participants stated that the DLIS current work placement training plan was not effective. The plan was general (including library routines and procedures) and did not specify ICT skills training. The employers' interviews and focus groups indicated that the plan was not used to improve the students' ICT skills and that the DLIS had to devise a new training plan that would have specific ICT skills training. There was also the issue that some of the teaching staff were unaware of the work placement plan.

8.4 Attitudes

Certain attitudes were found throughout the findings of the qualitative and quantitative data that hindered the students' skills improvement, discussed below.

8.4.1 Level of motivation at the DLIS and home

The employers' and teaching staff interviews and employers' focus group sessions indicated that there was a need to motivate students at the DLIS and at home to encourage them to improve their ICT skills. Students, however, indicated that they were not motivated enough at the DLIS to improve their ICT skills. For example, there was no encouragement from the teaching staff to use ICT and ICT resources

were not accessible. In addition, females received less encouragement to use ICT at home. This was also stressed by the employers.

The quantitative data supported the previous qualitative data, as it showed that the students in both years (1st and 4th) of their study were not motivated at the DLIS to improve their ICT skills. This was measured on a six-point semantic differential scale ranging from "1= not motivated" to "6= motivated", most of their responses ranged from "1" to "3". Whereas in contrast the students in both years were motivated at home to improve their ICT skills, most of their responses ranged from "4" to "6" motivated. This could be due to the reason of recognising the importance of ICT especially by literate families or even those uneducated families wanted their children to learn or because the ICT facilities were available at home.

In addition, correlation coefficient results showed that there was a significant positive correlation between certain student attitudes (confidence, easiness, usefulness, home motivation and interest) indicating a strong association (at the 0.05 level of significance) between these variables (Chapter Six, section 6.9). There was a significant positive correlation between "home motivation" and "interest", "confidence" and "home motivation", "usefulness" and "home motivation", and "easiness" and "home motivation". This indicates that students who were motivated at home to improve their ICT skills were also interested in improving them; were confident to use ICT applications; found their ICT skills to be useful; and found ICT applications to be easy. By contrast DLIS motivation had no significant correlation with any of the variables, indicating that this factor had no relationship with any of the variables. Overall, the students that were motivated at home were generally more positive about their ICT skills. However, these variables need to be considered when trying to motivate students on the use and improvement of their ICT skills.

The DLIS was found to be an unsuitable environment due to the lack of ICT facilities to motivate both the teaching staff (to encourage the students) and the students (to improve their skills). It was found that students who were motivated at home were better equipped to improve their ICT skills. Smith and Hepworth (2005, p.47), also noted that the learning environment was a factor in motivating the students towards learning information skills and searching information.

8.4.2 Lack of students' interest

The interviews' data revealed that interest affected students' ICT skills improvement. Results of the quantitative data showed that out of five options the students were most motivated by their "personal interest" (58%) factor which encouraged them to learn new ICT skills. Furthermore, more than half of the students (64%) indicated that they were interested in improving their ICT skills. This implies that the majority of the students do have an interest in improving their ICT skills and having the right environment would foster and could build on this motivation.

8.5 Social influences

This theme included the social factors that hindered the students' use of ICT, such as gender, ICT access at home, and family influence each will be discussed separately as follows.

8.5.1 Gender

The main targeted population of this research were the DLIS students. The interviews' participants (employers, teaching staff and students) stated that there were no gender differences on the students' ICT skills learning and improvement. In addition, the quantitative data revealed that the gender factor was only rated by 9% of the students, indicating that it did not negatively affect their ICT skills improvement. Nevertheless, differences relating to gender were found.

The findings of the interviews suggested different ICT skills among male and female students. Male students were viewed to have better ICT skills than females, as was stated by employers and teaching staff. The same result was found by Hakkarainen et al (2000, p.111) in a study of Finnish schools, that had the same gender split and 50% were at the high-school level, they found that male students in all ages reported that they used and mastered ICT intensively. However, in this research, male were viewed to have better ICT skills than females could be for different reasons, such as:

- the different content of the ICT courses offered in the two cohort (males and females);
- the teaching staff at the male cohort were more specialised and/or experienced in teaching ICT skills and updating them;

- males had more opportunity to practise their ICT skills on their own and without "being watched" at home;
- females were socially forbidden to practise their ICT skills and some had no access to use at home, discussed further in section 3.2.2 Family and mistrust.

The results of the questionnaire suggested that 44% of the male students used ICT equipment "daily", whereas only 24% females used it on a "daily" basis. However, females 34% used ICT "weekly" compared to 29% males. This is similar to the findings of Hakkarainen et al (2000, p.111), when they found that 20% of females used ICT on daily basis, whereas the majority used ICT at least weekly. The quantitative data, in this study, also showed that most of the females (74.4%) had an "intermediate" level and that males appeared to be more "proficient". However, chi-square results (chi-square = 0.870, df = 1, p = 0.351) showed no statistically significant association between ICT skills level and gender.

On the other hand, the finding of the males' focus group varied. It indicated that males had more weakness than strength in their ICT skills and used them only when they were assigned to. The female focus group confirmed that they were more positive than the males on the skills they had learned and on their ICT skills strength indicating a better level of their skills. This indicates that either male student were getting more assignments or that females were more interested and positive to use ICT. This is consistent with the findings of Hakkarainen, et al (2000, p. 115) and Almahboub (2000, p.65), in Kuwait, who stated that females had a positive attitude towards the use of ICT for learning. However, the male and female focus groups number in this study (six males and seven females) may not have been representative of the opinions of the 225 students' questionnaire sample. It is therefore unclear exactly how the ICT skills level differed between genders. Females applied them more frequently and yet male seemed to have more and a better level of ICT skills, further future investigation in this issue will attain more accurate data. However, although most of the respondents indicated that gender was not an issue, it appeared to be a factor that has hindered the improvement of the students' ICT skills.

8.5.2 Family and mistrust

The qualitative data suggested that mistrust from family and the DLIS has hindered the students' ICT skills improvement. For example females were socially forbidden to use the internet at home. This findings is supported with the findings of Elnaggar (2008, p.285), who found that social norms in Oman[25] were a barrier for females in ICT related fields. This was also reinforced by the questionnaire results, it indicated that "family" (21%) and "social traditions" (20%) as factors negatively influencing ICT skills improvement. The two factors were ranked third and fourth from a list of six factors (Chapter Six). Although the percentages were relatively small, there is an indicator that these factors had influenced ICT skills improvement. In addition, students (males and females) were not given passwords to use the ICT at the DLIS laboratories.

8.6 Resources

The ICT infrastructure at the DLIS was lacking in terms of accessibility, facilities, and budget. This will be discussed below.

8.6.1 Lack of ICT accessibility at home, libraries and DLIS

The lack of workstations at home, DLIS, and the College's library prevented students from improving their ICT skills. In fact this appeared to be one of the major problems that hindered learning ICT skills.

The results of the interviews indicated that 50% of the females (as stated by a teaching staff, section 5.7.6) did not have computers at home. This could be because females were forbidden to use the internet (section 3.3.2) or was seen as an excuse from them (females) to not do homework. However, more accurate results were obtained from the students' questionnaires. The quantitative data showed that only 9% of the students ticked the "do not have ICT access at home" option and it was ranked at the end of the difficulties faced (Chapter Six), indicating that females did have access at home. In addition, 90% of the students indicated that they were using ICT equipment mainly from their "home". Moreover, the National Profile of the Information Society in Kuwait (2008) indicted that Wi-Fi with DLS has been widely

[25] One of the GCC countries that shares the same cultural and social traditions with Kuwait.

used by many families in Kuwait (Chapter One) (United Nations Economic and Social Commission for Western Asia 2009).

The interviews also indicated that LIS students were not visiting the college library regularly to use its ICT facilities. The quantitative data supported this, it showed that 29% of the students used ICT equipment at the DLIS School and only 15% used it at the "public library". This indicates that the students were not making use of the workstations at the DLIS laboratory either because of their unavailability or because they didn't find the DLIS environment to be suitable or they were not assigned to use them. The finding of the focus group supported this. Students stated that there were not enough workstations available at the DLIS laboratory and at the college library to perform their assignments. A similar finding was reported by Ocholla (2000, p. 44) in LIS schools in Africa, where there was also a lack of computer laboratories.

Results of the focus groups also suggested that there was no collaboration between the DLIS and the library in providing adequate facilities (such as computers) to students. The employers' interviews suggested that students should be assigned to use the laboratory facilities. Hakkarainen, et al (2000, p.116) support this argument, and stated that not only should ICT access be available to students in laboratories, but it should be available in the classrooms and integrated into all subjects in Finland.

Another issue worth mentioning here is that although Kuwait is a very rich country, it was evident from the qualitative results that there are still some libraries, including school and public libraries, which are not automated. This deters students from going to these libraries whether to use their services or to get trained.

8.6.2 Lack of facilities and budget

The lack of regular maintenance and low server connections was recognised as hindering the students' ICT skills. This was confirmed by the interviews participants and the results of the quantitative data where "low maintenance" (25%) and "low internet connection" (25%) were both ranked fifth among the list (Chapter Six) of ten difficulties faced by students. A similar finding was reached by Lesher and Abdel-Motey (2002, p.16), when they reported that the majority of the students surveyed at the DLIS in Kuwait indicated that 85% of the facilities needed improvement.

Lutwama and Kigongo-Bukenya (2004, p.106), also concluded that the lack of ICT facilities in Uganda hindered the students' training and practise.

In addition, the qualitative data indicated a shortage in the DLIS budget for providing hardware, software and regular financial support. The quantitative data showed that "not enough hardware at DLIS" (33%) was the third out of a list of ten (Chapter Six) difficulties faced by students and "not enough software" (16%) was rated as sixth. A similar finding was found by Minishi-Majanjaa and Ocholla (2004, p.206), who reported a lack of funding for ICT implementation in African schools. Ur Rehman and Al-Ansari (2003, p.177) also found that the LIS schools in the GCC countries, in general, were deficient in their hardware, software, and other technological resources needed for the instruction of ICT courses.

8.7 Positive suggestions by respondents

The interviews and focus group sessions gave rise to suggestions for improving the students' ICT skills; starting with the admission requirements, curriculum modification, collaboration with stakeholders, and changes related to professional needs. These will be discussed under the following sub-sections.

8.7.1 Admission requirements

The respondents suggested changes in the admission requirements to obtain better quality of students, such as only accepting the enrolment of students with higher GPA and skills. The requirements suggested included the following.

8.7.1.1 Previous education

The interviews recommended that the ME should add a comprehensive compulsory ICT course during the students' schooling, for example during intermediate or secondary school. This will prepare them for the higher education and it should reflect needs of the job market. Although this was recommended by Al-Anzi back in 1995 and courses such as Computer applications, Information Technology, and Report writing (deals with information literacy and report writing) were added into the high school curriculum, the students' ICT level had not improved, to date, according to the results of this research and to research conducted by Ur Rehman and Alfaresi (2009).

The ME has in fact started instructing ICT in schools and is now moving from the traditional books learning environment to an ICT resource provision. In order to move to an e-learning environment, the ME has distributed 1755 computers to public schools; teachers are being trained to be computer literate; and electronic content is introduced into the curriculum (Abdudayem 2008, p.49). This is likely to make a significant difference to future students. In addition, it will put pressure on DLIS to develop its ICT environment to meet expectations.

8.7.1.2 ICDL

The European Computer Driving licence[26] (ECDL) is becoming a prerequisite for public library jobs in the UK and the first preferred choice of their training in ICT skills (King, McMenemy & Poulter 2006, p.267). UK institutions, as well, offer their staff the chance to gain this qualification (Greenwood & Cooke 2008, p.146). The results of the interviews indicated that the ICDL is also becoming a requirement of employment in the public sector in Kuwait. The qualitative data suggested having the ICDL as an entry level requirement for LIS students. This would improve their ICT skills and would guarantee that students entering the programme at least have the same skills to begin with. In Kuwait, all governmental organisations employees will receive the ICDL qualifications over the next five years. This will also increase ICT skills improvement and awareness in the Kuwaiti public sector (ICDL GCC Foundation 2007, pp.1-2).

8.7.1.3 Students' skills evaluation

The qualitative data suggested that students' ICT skills should be assessed before admission to the programme to evaluate their skills level and determine the improvement that could be made. This is comparable to the findings of Macklin (2008, p.246), who suggested that assessments of ICT skills should be done to improve and revise instruction delivery. He also suggested that ICT skills assessment

[26] A training package that covers seven core aspects of ICT: basic IT skills, computer use and file management, Word processing, spreadsheets; database; information and communication.

could be done through *iSkills*, assessment provided by the Educational Testing Services[27] (ETS) (Macklin 2008, p. 236).

This kind of test ensures that entry level students are well prepared in terms of their ICT skills literacy. It measures the students' ability to search and evaluate information, has been recognised by the ACRL standards; and identifies where further curriculum development is needed. The assessment can be conducted on two levels: core and advanced. The test has been applied in American and Canadian universities and colleges such as California State University (CSU), Purdue University, and University of Wisconsin (ISkills™ Overview, 2009).

8.8 Curriculum modification

Respondents suggested the modification of the ICT curriculum. They recommended adding assignments, course works, and other activities discussed below.

8.8.1 Reading and Graduation project

Encouraging students to form the habit of reading (by assigning them) and knowledge sharing (recording what they learn and then sharing it with others) was suggested as means to improve their ICT skills. It was also suggested by the employers that students should present a graduation project. It should incorporate ICT skills, other skills learned through LIS education, and work placement training. Hanson-Baldauf and Hassell (2009, p.10), suggested that assigning students to major or minor projects using emerging technologies (such as blogs, podcasts, wikis, RSS feeds, and social networks) supports their ICT skills and helps students engage with new ideas relevant to the LIS field.

8.8.2 Curriculum review

Khoo, Majid and Chaudhry (2003, p. 139) and Ur (Ur Rehman 2007) emphasised that LIS programmes should go under systematic evaluation and external review of their context, strategies, curriculum and resources by surveying the perceptions' of students, teaching staff, alumni and other stakeholder, such as employers.

[27] A non profit organisation that establishes research based assessments and develops educational products and services.

The employers and students suggested the need to evaluate and review the curriculum regularly. This is consistent with the findings of Ur Rehman, Al-Ansari and Yusuf (2002, p.24) and Rehman and Al-Ansari (2003, p.178), who asserted that the curriculum revision in the GCC LIS schools was required to reflect changes in the digital job market. In addition to, the findings of Hallam (2006) and Blankson-Hemans and Hibberd (2004) who suggested curricula revision should include new LIS courses. Reviewing the curriculum would provide the teaching staff with an insight to the problems the students are facing and what will work towards changing the ICT curriculum according to the students' and needs of the job market.

8.8.3 Teaching staff evaluation

It was suggested that teaching staff evaluation was required to assess their level of teaching and training. This would help in assessing their ICT skills overall and determine in which areas they need improvement or updating and training. Ocholla and Bothma (2007, p.75) stated that "a general system of external examiners and regular external evaluations, tend to help departments stay on track and ensure that their teaching and research is of an acceptable quality".

8.9 Collaboration and accreditation

Elnaggar (2008, p.288) suggested that the "lack of coordination leads to duplication of efforts, incompatibility of solutions, and comprised sustainability". The qualitative data indicated that there was a lack of official collaboration between the DLIS and employers to enhance ICT skills training and curriculum design. Collaboration was done between the two for work placement training only. Nevertheless, data suggested that collaboration with employers would achieve courses modification and updating; help plan to meet future needs; support ICT skills training needs through work placement; and provide employment opportunities and workshops.

In addition, Khoo, Majid and Chaudhry (2003, p. 137) argued that "dialogue and consultation" were the essential features of the accreditation process and it ensures that LIS schools communicate with teaching staff members, the university administration, employers, students and graduates, other LIS schools, and other departments in the university. The data, in this research, indicated that professional

organisations standards/guidelines were not consulted to shape the context of the ICT courses or the curriculum as whole.

8.10 Changes

The qualitative data suggested changes in the programme title and the overall image of the profession.

8.10.1 Programme title change

Some LIS schools in Asia, and in the West, changed their programme titles by eliminating the word "library" and changing their traditional LIS related core courses into ICT courses to reflect the needs of the job market and attract students (Miwa 2006, p.21). The teaching staff at the DLIS disapproved of a title change of the department without the change of the courses offered and careful planning. A similar finding was reached by Marouf and Ur Rhman (2007, p.207), when they found that to change the title of the MLIS programme in Kuwait, there was a need to change the content of the courses and provide additional resources.

8.10.2 View of profession

The employers and students suggested a change in the librarian's job title. They indicated that librarians were degraded because of their job title. Marouf and Ur Rhman (2007, p.207) and Lesher and Abdel-Motey (2002, p.19), reported an equivalent finding when they stated that librarians in Kuwait were given demeaning titles. Ojedokun and Moahi (2005, p.136) also had a similar finding in Botswana, where MLIS graduates had a negative perception of their profession and that it limited their chances of employment. In addition, Breen et al. (2002, p.131) indicated that the image of "the librarian" was preventing the employment of LIS graduates in the private sector. Al-Ansari and Conaway (1996, p.37) recommended that distinctions in job titles such as professional, paraprofessionals, and clerical information workers should be made between LIS information workers in Kuwait. This will change the public view of the status of librarians and LIS graduates would be more likely to be employed in non library jobs. This could increase their salaries and help change the public mentality. In this regard, the LIS graduates gathering in Kuwait urged the Minister of Education and Higher Education to support LIS graduates by changing their job title from "ameen mektaba" which means a library

keeper to an Information specialist, since this is an international standard worldwide (Alshemeri 2008).

The qualitative data also suggested a need to educate the public about the profession as this would change their view of the librarian and encourage students to join the DLIS and the profession as a whole.

8.11 Conclusion

The critical factors that negatively hindered the ICT skills improvement were: the teaching and learning environment; attitudes; social influences; and resources. The DLIS can overcome these factors and improve the students' ICT skills (and obviously other skills) once the curriculum, teaching methods, teaching staff are modified/improved and facilities are made available. The attitudes and social influences factors could be tackled through positive encouragement at the DLIS and having more trust in females at home.

The respondents suggested ways to improve the students' ICT skills. These, from their point of view, will help in accepting students with good qualifications to the programme and included: reviewing the curriculum; collaborating with stakeholders; and modifying the perception of the profession.

To improve ICT skills some attempts have been made for example ME has equipped schools laboratories; started instructing ICT in schools at all levels; teachers are being trained to be computer literate; and electronic content is introduced into the curriculum. In addition, training citizens on the ICDL has been taking place and all employees in the country will receive the ICDL qualifications over the next five years. The DLIS has started instructing an ICT course in English and the CBE has organised a committee to develop work placement training. However, the impact of all of this is yet to be seen. Therefore, the next chapter presents recommendations to overcome and improve the ICT skills situation at the DLIS. It also provides a conclusion for the research, identifies limitations, and makes suggestions for future research.

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Chapter Nine: Conclusions and Recommendations

9.1 Introduction

The study has achieved its aim of exploring the ICT skills level of LIS students in Kuwaiti HE that were potentially defined by the job market. It investigated the ICT skills level of those students through their own views, of employers and teaching staff. It also brought forward the factors that inhibited ICT skills improvement and suggestions for their enhancement, from the opinion of the stakeholders.

9.2 Main findings and conclusions

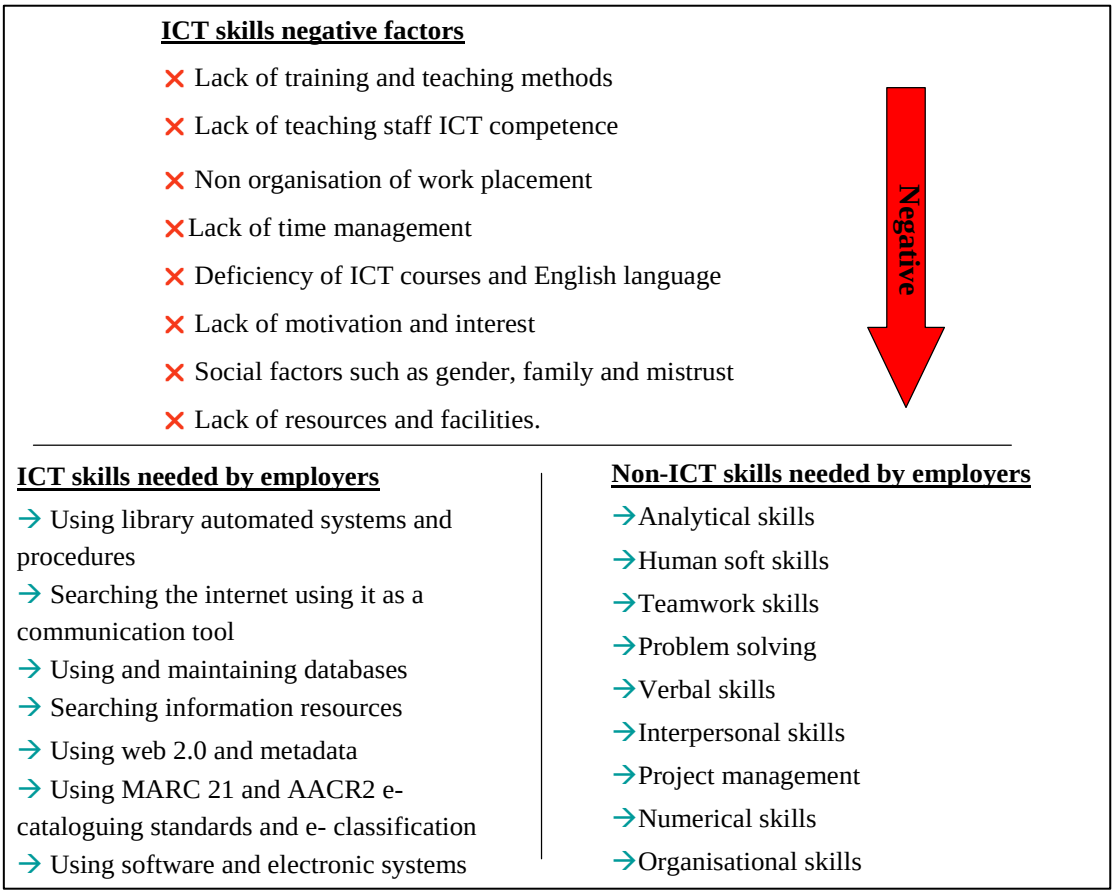

Figure 9.1 Summary of research findings

Figure 9.1 shows the main findings of the research; the barriers that inhabited the learning of ICT skills and non-ICT skills needed by employers; these will be explained in relation to the research objectives as follows:

The ***first objective*** of the research was to identify the current level of the students' ICT skills. Overall the students had knowledge and basic ICT skills. They had basic knowledge of office applications (such as Microsoft word) and Internet searching skills (such as basic keyword search). However, the students lacked advanced searching and internet navigation skills (such as using Boolean and truncation).

Concerning the students' ICT skills level, the majority (71%) had an "intermediate" ICT skills level, the majority (73%) of whom were in their 4th year. The "proficient" students' ICT skills level was 14%. However, 85% of the students did not have enough ICT skills; their level was self-rated as "intermediate" or "beginner".

The ***second objective*** of the research was to identify the main factors influencing students' acquisition of ICT skills. The negative factors found were: the teaching and learning environment (lack of training, the use of traditional teaching methods, lack of time, teaching staff incompetence, lack of ICT courses, English language proficiency, and the non organisation of work placement); attitudes (lack of motivation and lack of students' interest); social influences (gender, family and mistrust); and resources (lack of ICT accessibility, and lack of facilities and budget).

The ***third objective*** was to identify methods of teaching and training ICT skills and compare them with ones preferred by students. The most preferred students teaching and training method was the "group training" (36%) followed by "one-to-one" (19.7%), which was also stressed by the teaching staff. However, employers suggested the use of online training which was not preferred by both students and teaching staff.

The ***fourth objective*** of the research was to identify LIS graduate ICT skills needed by employers. The students were interested in employment at the private sector and preferred it to the public sector but they lacked the skills and experience of employment at that sector. Employers and teaching staff agreed that the students' ICT skills did not meet the needs of the Kuwaiti job market. The employers, however, identified further ICT skills (such as using library systems and automated procedures, searching the internet and using it as a communication tool, using and maintaining databases, using web 2.0 and metadata, and applying MARC 21 and AACR2 e-

cataloguing standards) and non-ICT skills (such as analytical thinking skills, human soft skills, attitudes skills, teamwork, problem solving, verbal skills, marketing skills, interpersonal skills, project management, numerical skills, and organisational skills) that LIS graduates should possess for employability.

The ***fifth objective*** was to investigate the current ICT courses in terms of gaps in teaching and needs of the job market. The research found that the ICT course content was inconsistent. There was an imbalance between theory and practical training and both were rated as "insufficient" by students. In addition, the "not enough courses offered" (52%) was the second choice, out of ten options, the students made.

It was also found that the ICT courses' content did not reflect the needs of the job market and were outdated. There was no use of un-unified courses' outlines and courses had different outlines. There was also little use of the English language (only one courses was taught in English) which has hindered the students' ICT skills improvement and ICT use. In addition, work placement needed careful consideration in terms of its duration, credit, meeting the training objectives, and a well developed training plan.

9.3 Recommendations

The following recommendations are made in relation to the research's aim and objectives (Figure 9.2):

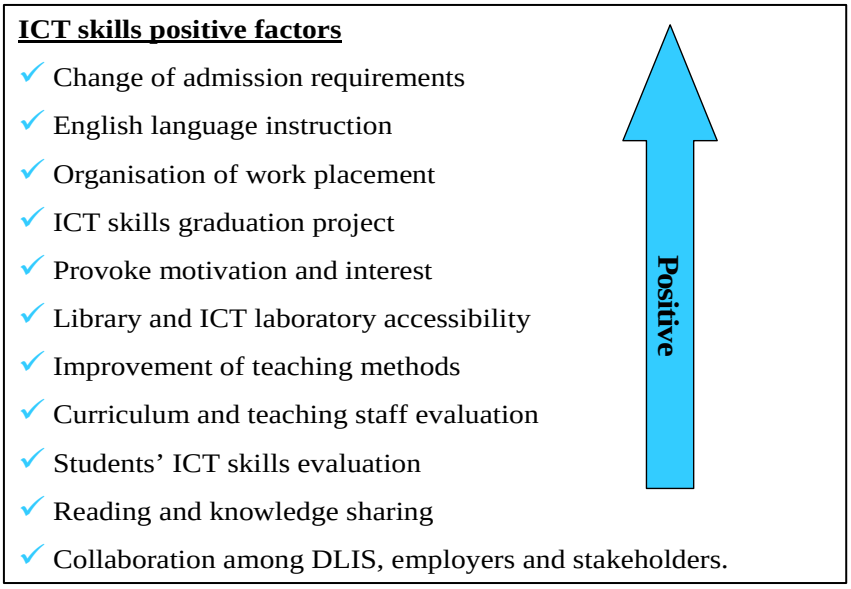

Figure 9.2 Summary of positive factors

9.3.1 ICT skills improvement

Overall the students had an awareness and knowledge of the ICT skills term, but they lacked ICT skills. The students needed additional relevant ICT skills and other non ICT skills that the DLIS needs to introduce including various subjects in statistics, communication, marketing and management to improve the students' skills needed by the job market and to prepare them for further studies.

The students generally had basic ICT skills and the level of these skills varied. Online tutorials in basic ICT skills, defined in this research, before LIS education started would help to ensure that students had the same level of skills. According to the qualitative and quantitative findings, LIS graduates lacked the skills needed by employers including:

- Database searching and maintenance.
- Web page design and construction.
- E-cataloguing and e-classification skills.
- Information searching and retrieving skills.
- Using library automated systems.

Some of these skills (such as database searching and information searching and retrieving) that the students are learning at the DLIS could be enhanced if practical training could be provided upon request from the teaching staff. King, McMenemy and Poulter (2006, p.272) reported that because database use training is a "complex package people require more extensive training". Anwar and Alansari (2002, p.236) stressed on the importance of developing an in-house database as a skill, which received the lowest rate out of fourteen ICT skills (such as planning of automated systems, searching online databases, Web page searching, internet applications, local area networking and others), because "western databases do not cover indigenous research literature". However, the training would depend on the availability of the teaching staff and facilities, including ICT equipment. In addition, students could be advised to use online authorised courses. These could be reviewed and suggested by the teaching staff. For example TONIC[28] (http://www.netskills.ac.uk/onlinecourses/tonic/) provides an introduction surfing the internet and the World Wide Web

[28] An online introduction course to the internet and the web provided by Netskills.

(WWW) for free and is easy to use. Also teaching students trouble-shooting to know the basics of ICT problem solving would be important. This also could be done through using free online sites.

Searching skills could be improved by teaching students how to use relevant terminology and refine their searches using the advanced search options. The other skills (such as web page design and construction, e-cataloguing and classification skills, and using library automated systems) could be improved by providing stand alone, comprehensive training courses, and work placement training. Further, a suggestion by the interviewees, was that the DLIS could provide additional courses and a minor specialisation in ICT skills that the graduates were lacking and need for the job market, such as those mentioned above. ICT skills should be included within all LIS subjects to reinforce skills. It would also be crucial to survey the students regularly to know their ICT skills level and future training needs. In fact recently the department has started giving an informal test to examine the students' knowledge and skills capability before they are admitted to the programme[29], this should be made formal.

This research found that there was a recognised need among employers, the DLIS, and students that they should cooperate to evaluate the curriculum and to get feedback from employers on the skills and training required. Thus the DLIS can change/add new courses according to the needs of the job market (Figure 9.3).

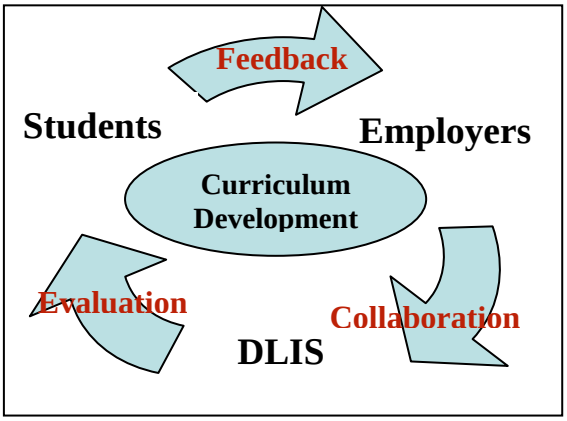

Figure 9.3 Curriculum development cycle

[29] Interview with the Head of DLIS, Kuwait, 07 July 2009.

Collaboration within the department (among the teaching staff in teaching courses) and between the DLIS and employers, the computer department, the faculty's library, and the Libraries Association of Kuwait (LAK) should be encouraged as a solution to improve ICT skills, enhance training, and curriculum development. One of the teaching staff suggested that "*collaboration should be done within the department, between teaching staff and the practical training teachers to work as a group on training students*". Minishi-Majanjaa (2007, p.11) recommended that heads of LIS schools should cooperate with others schools who have the expertise to offer ICT courses that they lack. Chaudhry (2006, p.6) also suggested collaboration to progress the quality of LIS teaching, share teaching material, and learning styles.

Moreover, previous education ICT training (where basic ICT skills were learnt), training during LIS school (advanced level of ICT skills) and on the job ICT skills training (specialised ICT skills) must complement one another to improve ICT skills at each stage. For example, students would learn basic ICT skills such as word processing and emailing during their previous education. They would then learn more advanced skills such as web page design and using spread sheets at LIS education. This will eventually prepare them to learn and practise specialised ICT skills such as database and web page management through their employment which they could possess for life (Figure 9.4).

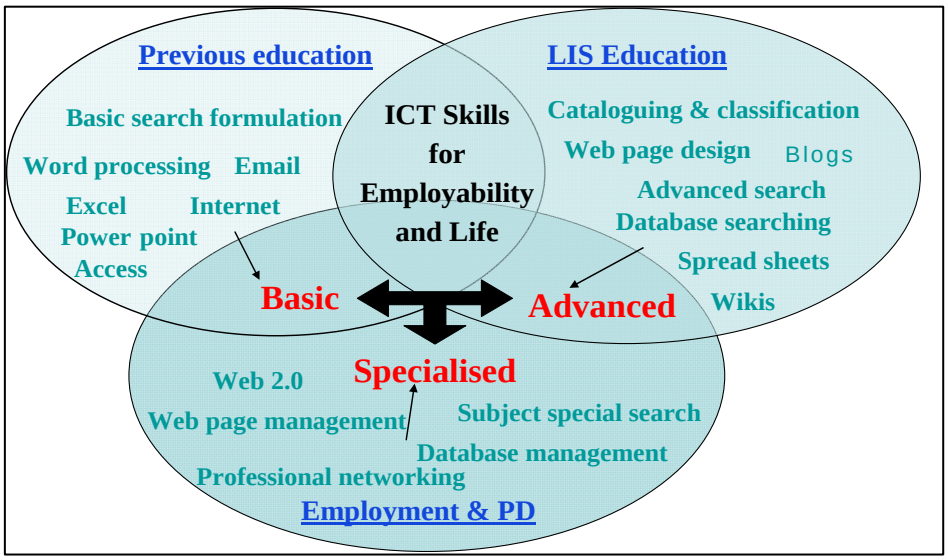

Figure 9.4 ICT Relationship between ICT skills improvement through Education and Employment

An accreditation body such as the SLA or LAK, as proposed by the respondents of this research, should pursue an accreditation system. LAK should be involved in setting standards/guidelines to achieve an accreditation system for the programme. LAK should also be more active in organising lectures, sessions, and workshops, in collaboration with the DLIS, for students, graduates, and teaching staff. Students should be encouraged to participate and take active roles in organising and marketing these sessions. In addition, LAK and the DLIS should be involved in organising seminars and campaigns of awareness on changing the public view of the status of librarians in Kuwait.

9.3.2 ICT curriculum

The DLIS curriculum has met some disapproval because ICT skills were not fully integrated and because it did not meet the needs of the job market. Even teaching the same ICT courses syllabus in both cohorts (males and females) would be beneficial. However, to develop the curriculum PAAET has started using DACUM[30], which assists in identifying new courses using WIDS. This helps the teaching staff at PAAET in identifying the needed skills to achieve a certain job. The curriculum would then build round these skills, ensuring the instruction of the same course to students irrespective of where it is taught or by whom. By using WIDS educators expected that PAAET will better serve the needs and skills of the job market (CCTimes 2007). The DLIS has also added a variety of ICT courses to its Optional ICT specialisation courses. It has also raised the quantity of these courses from four to six. Students can start to take these courses from their 2nd year[31].

However, a number of the non-ICT skills needed for the job market (Figure 9.1) (such as the human soft skills), as was suggested by the qualitative data, should be improved and instructed as standalone courses, since this is the case in worldwide LIS education. Other skills (such as attitude and teamwork) are to be taught as part of other LIS courses and some (such as marketing and interpersonal skills) should be merged to form one course.

[30] A system of developing a curriculum.
[31] Interview with the Head of DLIS, Kuwait, 07 July 2009.

The DLIS has made efforts to revise and change the curriculum. Proposed changes were made during the last four years to the LIS curriculum as whole. Some courses have been approved and are currently taught at the DLIS, to male students. The new major sheet of the programme is due to be effective in the academic year 2010-2011[32]. Based on an interview with DLIS head and document content analysis, it was found that changes have been made to the curriculum. Accordingly, ICT courses books should be imported and translated if needed. The teaching staff should be encouraged to write article and books based on the new ICT courses offered. Table 9.1 illustrates courses types, newly introduced, deleted, and those merged at the DLIS. The following can be concluded from it:

- Traditional LIS courses have been deleted/changed/merged into ICT oriented courses.
- New courses have been introduced in ICT, ICT skills, professional development, English language, and other non-ICT skills.
- An increase in the number of credits, accordingly an increase in the duration of the courses.
- An extension of practical work placement training.
- The introduction of a minor major to suit the job market skills needs.

Table 9.1 Courses added, deleted and merged of the DLIS Kuwait

Courses type	Credits (132)	New course(s)	Deleted course(s)	Merged courses
1. Compulsory general courses	24 increased to 30	Introduction to Computer Application		
2. Compulsory specialisation courses	24	• Information Organisation (1). • Ethics of LIS and the Profession. • Introduction to Computer Application in Libraries.	• Introduction to Subject Analysis. • Bibliographic description.	
3. Optional specialisation courses	15 from 21	Information Organisation (2).	Indexing and Abstracting Cataloging (descriptive and analytical)	Information Resources in Humanities and Information Resources in Social Sciences merged into Information Resources in

[32] Ibid.

Courses type	Credits (132)	New course(s)	Deleted course(s)	Merged courses
				Humanities and Social Sciences.
4. Optional specialisation courses	15 from 21	• English Readings in Librarianship. • Information Marketing and Public relations. • Communication Skills. • Knowledge Management.	• Information Marketing. • Records Management. • Archival Management.	• School Libraries and Learning resources Centres merged into Types of Libraries (1). • National Libraries, Academic Libraries and Special Libraries merged into Types of Libraries (2).
5. Optional ICT specialisation courses	12 increased to 18 credits chosen from 24	• Information Networks. • Electronic Publishing. • Metadata • Web page design and construction. • Digital Libraries.	• Communication Systems in Library. • Information Services. • Software Evaluation	
6. Compulsory Professional Development courses	30	12 hours of training in libraries and information centres.		

In addition, WIDS was used and the syllabus of LIS programmes in America, Australia, United Kingdom, and Egypt has been reviewed by the DLIS to redesign the curriculum. Nevertheless, the curriculum will still need regular revision and review. The focus groups data recommended having a curriculum review committee. Three parties should be involved in this: LIS students, teaching staff, and employers to develop and review the curriculum. It is advisable that experts on the LIS curriculum would be members of this committee.

9.3.3 Negative factors

Key factors that negatively affected ICT skills improvement included: the teaching and learning environment (lack of training, the use of traditional teaching methods, lack of time, teaching staff incompetence, lack of ICT courses, English language proficiency, and the non organisation of work placement); attitudes (lack of motivation and lack of students' interest); social influences (gender, family, and

mistrust); resources (lack of ICT accessibility and lack of facilities and budget). Some of these factors such as lack of motivation at home, lack of interest, gender, family and mistrust (from family) are beyond the control of the DLIS. Others such as lack of motivation from DLIS, lack of training, the use of traditional teaching methods, lack of time, teaching staff lacking ICT skills, inadequate ICT courses, English language proficiency, non organisation of work placement, mistrust, (from DLIS) and the lack of resources need to be reviewed and action needs to be taken by the DLIS and the CBE administration to reflect these problems. Some recommendations in relation to these factors are provided below.

9.3.3.1 English Language proficiency

English language instruction was needed to improve students' ability to practise the language, search information, and use library resources (such as databases and library system) so students will be able to develop enhanced skills. Besides Arabic being the medium of instruction, English needs to be used for teaching the ICT courses. English language should be incorporated more in curriculum especially in ICT courses in which systems and software are non-Arabic. Some LIS BA programmes teach the English language as an obligatory course, for example in Croatia (Horvat 2003, p.228); while others use English as medium of instruction, for example the MLIS in Kuwait. Teaching some of the LIS courses in English and especially ICT courses will no doubt develop the students' communication and terminology of the English language. It will also improve their searching capabilities and use of software and hardware. English terminology should also be used in other non-ICT courses to make students able to practice such terms and apply them in different use. The DLIS has recently added the course English readings in Librarianship[33] and is working towards adding an English conversation course[34]. The ME will start the implementation of English language in KG schools in Kuwait from 2010 (AMEinfo.com 2009). This will help students to communicate in English as their second language and at an early stage.

[33] An optional three credit course, introduces the selected texts from information resources in LIS. The texts are then read and understood without translation. Arabic equivalents of terms and expressions are then highlighted.
[34] Interview with the Head of DLIS, Kuwait, 07 July 2009.

9.3.3.2 Non organisation of work placement

There was a need to produce an ICT skills practical work placement training and development plan. All the teaching staff should be aware of it, not only those training students. It should be developed and used as a guideline by them and employers. Work placement training should also be set according to the plan. ICT skills improvement needs to be included as a main part of the work placement training plan.

The qualitative data also suggested a graduation project. The project should consist of a proposal agreed upon between the DLIS and the work placement organisation. A student or a group should try to solve a problem, for example suggest a new system or software. Ideally the project could be funded by the beneficiary organisation. However, the quality of output could be difficult to manage without organisation between the two.

9.3.3.3 Motivating students

The DLIS should provoke interest among students to encourage them to improve their ICT skills. This could be achieved by promoting them to use ICT in different assignments and linking this with their grades. Rehman and Marouf (2008, p.18) support this argument, they found that the teaching staff members needed to "encourage students and generate interest among them". Smith and Hepworth (2005, p.47) also indicated that students' "interest in a subject and some prior knowledge of it" as important motivating factors to become information-literate. Therefore, LIS students (quantitatively the students had interest to improve their ICT skills) need to be willing to enhance their skills to improve their chances of employment.

In addition, the DLIS should consider the gender issue among its students and try to provide equal chances of education in both cohorts by offering the same ICT courses, expertise teaching staff, and encouragement to students.

9.3.3.4 Lack of ICT resources

The students were not making use of the libraries inside (College library) or outside the College (public libraries) to use ICT and to practise their ICT skills. This could be due to the DLIS not requesting students to visit the libraries or that these libraries are not well equipped or there was not enough publicity that students are aware of what is

offered in terms of technology and/or the level of ICT facilities or services provided. Therefore, the DLIS should assign students to visit the different libraries (such as the College library, the public library, special libraries, and information centres) to practise their ICT skills through regular coursework. Furthermore, these libraries should market their services including available ICT equipment, electronic resources, and opening hours to students through their web pages and other media to encourage students to use them. In addition, ME (or stakeholder) should work towards automating schools and public libraries to suit the needs and number of their patrons.

The students needed more time to use the laboratory facilities, beyond the official opening hours. This is consistent to the finding of Ruhman and Marouf (2008, p.20), who recommended the improvement in laboratory hours and technical support in the MLIS programme at KU. In addition, the time allocated to use the workstations at the College library and laboratories and the library opening hours should be scheduled. The use of ICT should be done to provide better training and to help student manage their time to improve their ICT skills. Moreover, the DLIS should provide in-house ICT expertise, maintenance, and technical support at its laboratories and during ICT sessions.

9.3.4 Improvement of teaching methods

It was suggested by the interviews and the focus group data that students should choose their own way of teaching and learning environments; they should be involved in the learning process and get to choose the teaching methods that best suits them. It was therefore recognised that the students' training needed to be designed to meet the individual needs of students. This could be achieved by surveying the students and testing their ICT skills improvement when they apply/design programmes appropriately. This corresponds with the findings of Hanson-Baldauf and Hassell, (2009, p.9), who indicated that in designing learning opportunities it was essential to consider each individual's technological skills, "stage in the instructional technology evolution process and preferred learning method".

The findings suggested that theoretical teaching alone was not enough to equip students with the future needs of the job market. It is suggested that LIS graduates should enter the job market with Knowledge gained through theoretical teaching, in

addition to ICT skills and other skills that are gained through practical training. It is also suggested that the curriculum, AND the learning and teaching environments are changed.

There is a lack of professional ICT training at the DLIS. Therefore, the DLIS should continue to practise its teaching and training using the current teaching methods, in addition to using other new methods as was suggested by the qualitative data. In addition, the Open Educational Resources[35] (OER) could be utilised to access and learn knowledge in delivering better ICT skills training. Teaching staff could also make use of OER learning resources by sharing and downloading licensed teaching material. This kind of learning has been applied in USA, UK, and Japan. Examples of the OER include: Massachusetts Institute of Technology (MIT) Open Course Ware and MERLOT in the USA, Jorum and Open Learn in the UK and in Japan the Open Courseware Consortium (JOCW) (Yuan, Macneill & Kraan 2009 and Hylén 2009).

DLIS can also employ online teaching/learning which provides LIS programmes opportunities to teach students about using relevant information resources which are widely used and are available online. Online teaching can serve and support different needs, adopting different learning styles such as online education, distant education and computer-assisted education (Minishi-Majanjaa 2007, p.8.) An example of an Computer-assisted online training is WebCT a platform used in delivering online courses that has been utilised in Manchester Metropolitan University (MMU), the Robert Gordon University (RGU), and the Tallinn Pedagogical University (TPU) (Virkus & Wood 2004, p.325), discussed in Chapter Two.

9.3.5 Building bridges with employers

Communication between DLIS and the workplace needed to improve as there was no plan and no clear relationship between teaching and practice. The planning and implementation of training programmes needs to be reviewed in order to ensure that students are given every opportunity to apply their knowledge and skills acquired through their training in the workplace.

[35] OER is the online availability of learning materials that is free, licensed and could be used without restrictions.

The DLIS should consider collaborating more closely with the private sector. This could be achieved through students being encouraged to work in the private sector, through field visits and work placement training. Rehman and Marouf (2008, p.22) suggested the same when they recommended that there is a need to make use of work placement and to develop links with the private sector. They also recommended that the private sector should develop activities (such as training programmes) with academic institutions that would provide "mutual understanding and joint initiatives" (Marouf, Ur Rehman 2007, p.207).

Means to ease collaboration among LIS schools and employers can be achieved through recent ICT technologies that enable free of charge communication such as Twitter (http://twitter.com/) and Skype (http://www.skype.com). This technology provides the opportunity to quick feedback and exchange of ideas, while being geographically separated. It also allows collaboration with LIS educators globally.

9.3.6 Teaching staff ICT skills improvement

The teaching staff were found to have outdated skills is a very important point to consider by PAAET, because without qualified teaching staff the students' ICT skills improvement will not be achievable. This could be overcome by updating the teaching staff ICT skills, including assistant teaching staff, through regular workshops and self learning tutorials. PAAET has been offering such courses free of charge to its staff but these should be made compulsory and linked to promotion. The teaching staff need to have experience and specialisation in areas, such as e-cataloguing, e-classification, and database searching. They also need to know basic trouble-shooting. Minishi-Majanjaa (2007, p.11) suggested offering distant education and/or online education to overcome the problem of incompetence of the teaching staff with the availability of ICT facilities. There are also free of charge (such as http://openlearn.open.ac.uk/) and for a fee (such as Netskills www.netskills.ac.uk) online materials that offer professional development courses and workshops.

DLIS should encourage the teaching staff, PhD holders and non PhD holders, to continue their education to fulfil their ICT skills training gap and the departments' training needs. They should be encouraged to hold seminars/workshops and share their experiences. They should produce more research and attend related conferences

enabling them to keep up-to-date. This also could be made compulsory to get promoted. Another issue worth mentioning here is that assistant teaching staff employment criteria and qualifications needs to be reconsidered, since they should help teaching staff in practical teaching and giving one-to-one training.

9.4 Research limitations

A limitation of the research was that the students' rated their ICT skills level by their own self-assessment. As a result, the research findings may not represent their actual ICT skills level. This could be overcome by assigning students' ICT skills tasks such as an advanced database search and observing their performance. The 4th year students' ICT skills level could be also assessed by comparing their self-assessment to grades they earned through the ICT courses they took. Thus, a better view of the students' ICT level and gender differences would be attained.

Another limitation was that the research did not identify the specific ICT skills level of the teaching staff. Involving the teaching staff in future research to perceive their specific ICT skills level and to suggest ways for their improvement, would gain a better understanding of the situation.

9.5 Future research

The findings of this research have initiated some thoughts for further research, suggested below.

- Using different methods in future research to get a deeper understanding of students' ICT use and test their skills such as testing the students' ICT skills through observation and log analysis.
- Surveying different groups of other different programmes at the CBE to identify other negative factors that may influence ICT skills improvement in Kuwaiti education.
- Surveying other different organisations not included in this study, from the public and private sector to know their needs and whether collaboration has been achieved to offer better ICT skills training.

- This study needs to be repeated in future. In order to evaluate changes made, if any, and what needs to be done to overcome issues and problems faced.
- In future and after some of the recommendations of this research has been achieved, it is advisable that a comprehensive longitudinal study would be made on students' ICT skills before and after LIS education to anticipate improvements made.

9.6 Concluding remarks

As technology progresses continuously and rapidly, ICT skills needs improvement and updating. The DLIS have has made some attempts towards improving its ICT education. It has set (informally) a knowledge and skills capability test for students before their admission. It started to use online material to improve its courses content, raised their quantity and added an English course. However, this all has not been approved and curriculum revision and updating is only one step towards ICT skills improvement.

It is crucial that schools and stakeholders take action and get involved together in the process of educating their learners. It is also crucial that schools know the needs of their students in relation to the job market, in order to provide what is needed in terms of training, teaching methods, resources, collaboration, and curriculum revision. Regular surveying and evaluation of these issues and determining the factors that negatively deter ICT improvement would help in having better ICT skilled generation at LIS schools.

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Appendix 1. Paper presented at BOBCATSS conference

Educating Library and Information Science Professionals in Kuwaiti Higher Education

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ABSTRACT
The paper presents the results of 54 analysed interviews conducted to present the views and explanations of Library and Information Science (LIS) students, teaching staff and employers on the implementation of Information and Communication Technologies (ICT) skills into the LIS curriculum in Kuwaiti Higher education (HE). Semi-structured interviews were used to collect the qualitative data. The findings indicated that there was a lack of common understanding of the term ICT. LIS students lacked ICT skills. The LIS curriculum is outdated and the department uses traditional methods to teach ICT courses. Moreover, factors were found that negatively affected the students' ICT skills development. The current students' ICT skills did not satisfy the job market needs. The teaching staff ICT skills were not updated; ICT skills were not incorporated into non-ICT courses; and in general, respondents disapproved of the department's name change from LIS to Information Science (IS). In order to satisfy the LIS professionals in Kuwaiti HE, initial indications suggest that LIS graduates should posses at minimum all the research defined skills in addition to other skills needed by the job market. The curriculum should be updated; more practical training should be provided; the department of LIS needs to add new ICT courses; support new learning methods to teach these courses; adopt professional associations' standards to enhance the curriculum; collaborate with employers to meet their needs; the teaching staff needs to update their ICT skills and incorporate ICT skills into all courses. This initial phase of the research suggested that to overcome the negative motivational factors**:** students need to be motivated by family, friends and teaching staff; instruction of ICT courses should be in English; the same educational opportunities should be offered to males and females; and provide the necessary resources and facilities. These findings were recognised by the teaching staff.

KEYWORDS: Library and Information Science professionals, Information and Communication Technology skills, Kuwait, job market, curriculum, Higher Education, Department of Library and Information Science.

1. INTRODUCTION

Information handling and use have become integral to many job activities in the market, particularly in information related organizations. This is largely due to developments in electronic information resources and communications systems. These developments lead to the demand for employees with ICT skills and as such have become a necessity in information handling institutions. Education institutions have a responsibility to develop students' ICT skills to reflect the job market needs. Therefore, to have a competent graduate with ICT skills, there is a need to identify, understand and develop three main elements; namely the students, the education curriculum and gain an understanding of the job market needs.

LIS is taught as a bachelor degree in one college in Kuwait. The Department of Library and Information Science (DLIS) strives to fulfil the employment needs of various LIS sectors by equipping its graduates with different skills. As such, students' ICT skills in the department have been recognised as essential qualities for employment. These skills prepare graduates to perform and use different ICT technologies. It is for this reason that LIS students should possess ICT skills; these are required and agreed upon by the DLIS and employers.

In order to provide graduates with better ICT skills in DLIS (Kuwait), it was necessary to know their entry-level ICT skills and how these develop through their LIS education.

1.1 ICT SKILLS DEFINITION:

The following definition has been chosen in this research since DLIS (Kuwait) has not yet begun to deliver teaching in evolving subjects such as semantic web and

information architecture.
The minimum ICT Skills that LIS students need to access, evaluate, communicate information and to produce documents electronically by the use of computers and communication technologies. These ICT skills include:

- Using office applications (Word, Excel, etc);
- Using and managing library automated systems (acquisition, catalogues, circulation and current awareness)
- Maintaining in-house databases;
- Designing and constructing web pages;
- Databases, online and internet searching to retrieve information.

2. EARLIER RESEARCH

The review of related literature established the concept that ICT skills and knowledge are key to the training and education of Library and Information Science (LIS) professionals. This has been emphasised by LIS programmes worldwide. LIS schools have altered their curricula (Virkus & Wood, 2004; Horvat, 2003); changed their LIS programme name from LIS to IS (Ocholla & Bothma, 2007); and introduced new LIS courses (Callison & Tilley, 2001). These changes included ICT. This trend has emerged partly in response to the job market needs and has been the most prominent trend in LIS education (Ur Rehman, Abu Baker & Majid, 1998).

As new ICTs develop LIS curricula need to be revised depending on market needs and changes in technology. Academics need to realise the need for ICT skills in different sectors and organisations; and to incorporate theme in their syllabuses. LIS programmes need to change and develop new ICT courses that deliver the required ICT skills in order to survive in the constantly changing information world. Furthermore, possessing ICT skills will extend LIS students' interests and encourage them to practise a wide range of library activities, hence, increasing their chance of employment and potential to continue their education.

However, as well as LIS schools including ICT in their curriculum, they will also need to apply professional guidelines and standards to help develop their programmes. Curriculum revision needs to take place regularly (IFLA, 2002; ALA, 2006), to ensure LIS programmes' are updated and continue to meet the country's needs.

LIS graduate employers views' should be sought to identify whether employees have met their job requirements and whether there are gaps in their knowledge, skills and attitudes that could be improved by LIS departments (Ocholla, 2001) including their ICT skills capability.

Although LIS programmes are attempting to change their curriculum and to adapt to new ICT through their courses, programmes are facing challenges and barriers that may affect adoption and implementation. These include: lack of training and motivation (Abdel-Motey & Al-Ansari, 2003); lack of ICT skills among faculty (Rath, 2006) and students (Ocholla, 2001); lack of finance (Abdel-Motey & Al-Ansari, 2003); and lack of hardware, software, and other ICT facilities (Ur Rehman & Al-Ansari, 2003). These challenges and barriers facing LIS schools have led to a call for collaboration as a solution among LIS schools to help develop the curriculum. Ways of collaborating have included meetings, the exchange of views and faculty (Abdullahi & Kajberg, 2004), cooperating with other departments to improve the quality of teaching and research (Dalton & Levinson 2000), and sharing knowledge through the use of technologies (Chaudhry, 2006).

ICT implementation in the Arabian Gulf and Kuwait has been found to be limited. There was a lack of: qualified ICT faculty and library staff (Al-Qallaf, 2006; Marouf & Ur Rehman, 2007); lack of undergraduates' ICT skills and library skills (Ur Rehman & Mohammad, 2002); and a lack of ICT resources (Al-Ansari, 2006). The literature review showed that there has been little research on the topic in this area and in Kuwait in particular. There has been no recent empirical study on this topic. Therefore, this research focused on exploring the ICT skills in the Kuwaiti Higher Education and those needed by the job market.

3. LIS PROGRAMMES IN KUWAIT

LIS in Kuwait is taught as a four year Bachelor degree at the DLIS, College of Basic Education (CBE) supervised by the Public Authority for Applied Education and Training (PAAET). The program started in 1977 as a two year Diploma of LIS study at the same College. It was the required professional qualification to become an assistant librarian in Kuwait (Alqudsi-Ghabra & Al-Ansari, 1998).

In 1986, the LIS four years degree became the required degree. This was the only one in the country for librarians and the teachers of librarianship at secondary schools.

The programme focused on the education of librarians to meet the needs of school libraries and did not address the needs of other information sectors in Kuwait (Abdel-Motey, 1995). However since 1998, the programme has been the only one that qualifies librarians in Kuwait to work as information professionals in different sectors of the country to fulfil the needs of the Kuwaiti job market. Today it has about 700 students and 47 teaching staff, of

which twelve are pursuing their PhD studies in USA, UK and Australia.

In addition, there is a two year Masters of Library and Information Science (MLIS) programme that started in 1996 at Kuwait University, College of Graduate Studies. As a result of the extreme need for LIS professionals and information specialists in Kuwait to work in academic, public and special libraries and other information intensive organizations. Moreover, to offer librarians and information centre employees the chance to continue their education and provide LIS Bachelor holders the opportunity to extend their higher education (Alqudsi-Ghabra & Al-Ansari, 1998).

3. METHODOLOGY

The research data was collected over two stages. Combining both qualitative and quantitative techniques enabled reliable and in-depth information to be gathered. The methods used were the following: first a questionnaire was used to collect quantitative data from LIS students; semi-structured interviews were used simultaneously with the questionnaire to collect qualitative data from employers, teaching staff and students; the second data collection method was focus groups. This paper will only report the qualitative analysis and results of the interviews. The quantitative analysis of the questionnaires and the qualitative analysis of the focus groups will be reported in later research.

The semi-structured interview method was selected to collect qualitative data from employers, teaching staff and students. The interview participants were LIS graduate employers (public and private), LIS ICT courses teaching staff and LIS 1st and 4th year students.

4. FINDINGS

5.1 RESPONSE RATE

The semi-structured interviews were conducted in 11 different sites: 4 public and 7 private. The employer' respondents were selected from an employment list based on their experience in training and in the employment of LIS graduates. The teaching staff respondents were selected because they instructed ICT courses, trained LIS students. The LIS students were selected based on their willingness to participate by providing their contact details in the returned questionnaires. All respondents were contacted via email and telephone calls, confirming the time and place of the interviews. The final interview participants included 26 employers from the private and public sector, representing 11 different organisations; 12 ICT skills courses teaching staff; and 16 LIS males and females students, (Table 1).

Table 1: Interviews Conducted

Respondents	No. of Interviewees	*Remarks*
Employers	**26**	19 public representing 4 different organisations. 7 private, each representing a different organisation.
Teaching staff	**12**	9 PhD holders and 3 MLIS holders.
Students	**16**	8 males and 8 females.
Total	**54**	

5.2 MAIN THEMES

The 54 interviews were analysed using thematic analysis to present the respondents' views (and explanations) of the research's problem, using the research's objectives as guidelines. The main themes that emerged were divided into six main sections:

- ICT skills
- ICT skills training
- ICT skills and the curriculum
- Factors influencing ICT skills development
- ICT skills and the market needs
- Other issues

5.2.1 ICT SKILLS

There was a lack of common understanding of ICT and specifically the term itself was not commonly used and that ICT skills seemed to be a new term to most respondents. Most respondents pointed out that they knew what *"IT"* was but not *"ICT"*. One respondent pointed out:

> *It was my first time when I answered the questionnaire; I didn't have any idea of it.* (1st year)

Respondents were asked about the ICT skills that were practised in their organisations. The employers confirmed that many ICT skills were practised in their organisations. The teaching staff and the students confirmed that while many ICT skills were practised, they identified certain ICT skills that were not practiced at DLIS. Respondents (employers, teaching staff and students) agreed that database maintenance and web page construction was not practised in some organisations nor at the DLIS by LIS employees and students. One respondent said:

> *Almost all of these are practised, except for databases maintenance it's not fully done by us, we only do minor faults.*

Differences of opinion were evident regarding the students' ICT skills level. Students graduated with different ICT skills, but also with different levels of those skills. However, males were considered to have better ICT skills by employers and teaching staff. This could be because of the different training they undertook during their work placement or because they took different ICT courses. It is assumed that the students' actual ICT skills level will be gathered from the quantitative data in future research. One teaching staff respondent commented that *"students are now coping with technology more than they used to"*, and implied that the students ICT skills level will improve, as they use technology more and in different modes of use than before.

5.1.1 ICT SKILLS TRAINING

The employers and teaching staff stated that students had not gained enough ICT skills training during their previous education nor did their LIS education provide enough ICT skills training. The students' responses confirmed this, since 11, out of 16, felt that they did not learn ICT skills from their previous education. However, the 1st year respondents expected to develop their ICT skills and receive training through the LIS School. Some of the 4th year students believed they had developed their ICT skills and recognised their importance during their LIS schooling. One respondent added:

> *I learned from LIS School but I think it's not enough they gave us the key skills and the more we practise the more skilful we get.* (Female 4th year)

Employers also considered that students *"…have more understanding of the theoretical aspect of their studies but they do not know how to apply it; they come ready to be employed in a traditional library, which eventually will not be there in the future"* (Public sector). The respondents' views indicated a gap in ICT skills students' training during their LIS education. This was, according to them, due to concentrating on theory more than the practical training; training students in Arabic and not using English language; and the limited use of ICT or non use of ICT in some courses.

Moreover, the employers and teaching staff respondents agreed that there seemed to be a lack of a coherent written plan to develop students' ICT skills. The students' work placement training was not enough to develop their ICT skills and students needed more training on ICT skills:

> *There is a gap in preparing students for their professional life. Students are not examined on their ICT skills, neither before nor after their work placement training, to assess their ICT skills level.* (Public sector)

5.1.2 ICT SKILLS AND THE CURRICULIM

Teaching staffs' concerns were expressed about the curriculum which made it difficult to have planned integration of ICT; plus a general lack of ICT. The respondents stated that the curriculum was outdated and the department was delivering inappropriate ICT courses. The teaching staff mentioned many reasons for the inappropriateness of the ICT courses taught. Some said that *"there are no course descriptions provided for some courses"* and *"the same course may have two different outlines*". Also, some of these courses were *"taught only theoretically with historical overviews and without practical training"*. In addition, *"the ICT services and skills needed in most electronic and digital libraries are not represented in the courses offered in the department"*. The respondents added that the inappropriateness of the ICT courses was due to the following reasons: no unified course description; ICT skills needed by the job market were not offered; courses did not complement one another; and some ICT courses were taught in one section but not the other. Overall, the main problem behind this was in the inconsistency of the curriculum in between the two sections; the males and the females.

The department was using different traditional methods to teach LIS courses. According to the teaching staff the methods that they used in delivering their LIS courses are the following:

- Lectures using the blackboard, Power point, projector, data show and demonstrations;
- field visits to information centres and to private sectors;
- working in groups using the laboratories' facilities;
- handing in assignments electronically;
- short tests;
- in-class work such as online database searching;
- using websites and different information resources on the net such as searching subject databases;
- assigning students practical exercises, research, live presentations and group works.

The department still needed to support new methods to teach its courses. This requires approval and depends on the teaching staff preference. Moreover, the teaching staff were questioned about the learning and teaching methods

they adopted to teach ICT courses. They suggested that the following would be beneficial:

- Intensive ICT courses with the availability of a teacher assistant was viewed as the best way to *"assist in instructing those who need help and those with poor ICT skills"*;
- *"inviting guest speakers and ICT experts to give lectures and motivate students to recognise the importance of these skills*";
- *"open classes that it give better opportunities to learn specially in ICT, where you have to learn all what's new, there are more readings, it's like marketing the subject to students. They get to share what they learn"*;
- *"One to one because we have students coming with different levels of ICT educational backgrounds" and to "ensure instructions are well delivered*";
- Applying self-study to advanced levels of ICT courses.

The employers and teaching staff respondents thought that there was a need to update the curriculum, since no modification had been made to include new ICT courses. The teaching staff also considered it crucial to do this according to new well-developed policies and procedures.

They also thought that although adopting professional standards or guidelines were important, they had been not consulted to shape the context of the ICT courses. In addition, there was no official or regular collaboration between the DLIS and employers concerning students' ICT skills training and in curriculum design and implementation to meet the job market needs. If this kind of cooperation is undertaken, students are likely to have better training, employment opportunities and the DLIS will know generally the job market needs, especially of the private sector.

5.1.1 FACTORS INFLUENCING ICT SKILLS DEVELOPMENT

The respondents were asked about the factors that negatively influenced the development of students' ICT skills. The following factors were found:

EXTERNAL MOTIVATION

Motivation (for example encouragement by teaching staff) was stressed as important in the development of students' ICT skills. Students were not motivated enough to develop their ICT skills, this negatively affected their ICT skills development and learning. A 4th year student said:

> *No encouragement from teaching staff especially those instructing traditional courses.*

Employers in both sectors also agreed with the views of the students stating:

> *Encouraging them, they need to be motivated. Employees who have these (ICT) skills are more needed now than ever and their salaries in the private sector are increasing because of these skills*. (Private sector)

ENGLISH LANGUAGE

English language was another factor affecting students' ability to develop their ICT skills. Out of the 26 employees 18 thought English was a factor that influenced students ICT skills learning. As an employer illustrated:

> *Students lack English language which is necessary to use to develop their ICT skills*. (Public sector)

The teaching staff agreed with the employers' perception that students lacked English language skills due to their previous education. They found it a barrier affecting the learning of ICT skills, using library systems, searching databases, communicating and solving problems.

INTEREST

Interest affected the students' developing their ICT skills. It was found that only interested students will develop ICT skills. The employers' respondents (public and private) thought that as long as a student is interested he/she will develop skills. One respondent commented:

> *As long as the student has the desire to learn and if prepared to accept the challenge, he will develop his skills and be creative.* (Public sector)

The teaching staff participants' responses also supported the employers' previous view. One stated:

> *I usually give students the key skills to use ICT and they should work hard to develop them and only interested students will develop their skills.* (Male teaching both males and females)

GENDER

From the point of view of most of the respondents stated that, the gender factor did not affect ICT skills development. However, the gender issue appeared to

affect ICT skills development when it emerged through other sub-themes earlier. For example, the teaching of different ICT courses at the two males and females sections resulted in having different ICT skills among students. Males were considered to have better ICT skills than females by employers and teaching staff because of the more ICT courses they were taught and having better opportunities to practise their ICT skills.

RESOURCES AND FACILITIES

The respondents pointed out that there was a lack of resources and facilities. The unavailability of resources and facilities hindered the development of students' ICT skills. One of the 1st year respondents said:

> *When I came to LIS School I thought I will see everything computerised such as teaching methods, the classrooms, and the library. It was the opposite of my expectations.*

Employers' respondents stated that "training tools such as software and hardware should be accessible to students for training",

The teaching staff view was that the DLIS had a shortage of:

- Wireless technology;
- low connectivity;
- in house maintenance and technical support;
- lack of regular financial support from the department;
- procedures are difficult and slow in getting hardware and software;
- not enough laboratories to meet the number of students;
- ICT laboratories opening hours are inadequate;
- limited access to databases.

The "big numbers of students admitted to the programme every semester, doesn't fit it's (the department) capacities". The teaching staff commented that technical support should be available to maintain the tools.

OTHER FACTORS

Other factors also emerged such as the social factor that was mentioned by a few of the respondents. For example, it was stressed by one employer, who thought that students need family trust to practice their ICT skills. Supporting this view, only one of the teaching staff respondents perceived that females were socially not allowed to search the internet which influenced their ICT skills development. Two 1st year females' students also supported this as they pointed out that they were socially restricted by their families to search the internet until a certain age. Another female stated that having "*other commitments such as family*" hindered her ICT skills development.

Another factor was accessibility one employer respondent, thought that "*some (students) do not have accessibility at home and are not encouraged to use ICT*" (Public sector). The females' section teaching staff opinion supported this view; they found that not having access to a computer was a factor that affected the development of females' students ICT skills.

Technophobia was also a factor that hindered the development of students' ICT skills. It was related to their lack of ICT skills, not being able to use technology, being dependent in learning and not being motivated.

The factor of lack of time included: the lack of ICT laboratory opening hours; lack of time management of students and teaching staff that affected ICT skills development. The students stated that they did not have time to study and to practise their ICT skills. One student respondent also mentioned that they were not "getting enough training because teaching staff are always complaining of time shortage".

5.1.1 ICT SKILLS AND THE MARKET NEEDS

The ICT skills defined were all stated to be "*needed a lot*" by the Kuwaiti market as perceived by 15 of the students' respondents. They justified their responses with the following:

> "*All sectors demand them and are depending on technology and computerisation. Nothing is done manually now*" (1st year)

> "*Every organisation now has an in-house database to manage its work*" (4th year)

The majority of the teaching staff had the same opinion as that of the employers. They considered that the current students' ICT skills did not satisfy the market need. They pointed out that graduates should have all the ICT skills mentioned in the definition, "*maybe more to satisfy the market needs*".

The employers and teaching staff agreed that the current LIS students' ICT skills were not satisfying the job market needs. This raised the issue that although the graduates of the DLIS were mainly educated to work in public and school libraries (which were low in technology but are now heading towards the application

of ICT), the DLIS should take into consideration the needs of other employment organisations since it is the only provider of the Bachelor LIS programme in Kuwait.

The employers pointed out that LIS graduates need to be "*updated with the latest technology in their field*". They wanted graduates to show them "*new ICT skills, things we* (as students) *did not learn during* (their) *LIS studies*". Overall, employers thought that the students were also required to possess the previously defined ICT skills and have other ICT skills such as "*web 2.0 and now 3.0 is starting to be used. They need to have familiarity with the use of all technology. Using and locating metadata is also recommended*" and "*knowledge of MARC 21 and AACR2 cataloguing standards*".

Although ICT skills were the most essential skills to have, employers also suggested that LIS graduates should have other skills. They recommended that LIS graduates should have analytical thinking skills (such as applying what they already know to other databases and library systems), human skills (such as management skills and communication skills) and attitudinal skills (such as using their initiative, being responsible and approachable).

The teaching staff, supported the employers' view, that LIS students should possess other skills in addition to ICT skills, such as:

- Communication skills; "*knowing how to deal with users and being approachable*". To be able to "*use and deliver their ICT skills to others at their workplace and through their daily life*";
- "*Teamwork where students can encourage, challenge and learn from one another and develop other skills*";
- Problem solving.

5.1.1 OTHER ISSUES

The following issues have also emerged**:**

ICT TEACHING STAFF

Some of the teaching staff, as viewed by employers, were not updating their ICT skills and even lacked ICT skills. A comment referring to this is:

> *Teaching staff should update their own ICT skills, show their importance, and motivate students to use ICT and to develop their skills*. (Public sector)

The teaching staff responses conflicted with the employers'. They all affirmed that they were regularly updating their ICT skills, except for one who said:

> *"I'm really lazy in updating my skills regularly*"

The students and employers confirmed that the teaching staff ICT skills were not updated and some were not qualified to teach and train students. The lack of training teachers for training, supervise and teaching LIS students is a very serious problem that would deter the development of students' ICT skills. This is a very serious problem, because without qualified teaching staff, ICT skills development will not be achievable.

NON ICT COURSES

The employers and teaching staff respondents affirmed the need to incorporate the use of ICT into these courses. They commented:

> *I recommend ICT courses revision and concentration on ICT skills in all LIS courses*. (Private sector)

> *They should be given more assignments to develop their ICT skills even through non ICT courses such as making them use emails and word processing*. (Teaching staff)

The 1st year students pointed out that it was obvious from the course descriptions that most of the courses were traditional theoretical LIS courses. There were only five ICT courses delivered. Another student added that ICT was used in few courses and some teachers did not even insist on students using a word processor. The 4th year students stated that ICT was not included in all the LIS courses in fact "*not even half of them integrate ICT*". One respondent added that it "*depends on the teacher; some teachers find it hard to use technology*".

All three categories of respondents thought that ICT skills were not incorporated into non-ICT courses. However, the teaching staff and students considered that all teaching staff should possess ICT skills even if they were not instructing ICT courses.

NAME CHANGE

The teaching staff were asked about changing the name of the programme from LIS to "Information Science" or "Information Studies". They had different opinions regarding this. Those who agreed to the name change thought that it would change the courses offered, the view of the profession and level of students admitted to the programme. They also pointed out that "*this is the trend*

and this is what happening elsewhere but it needs careful planning, choice of courses, and lots of effort".

Other respondents who disapproved agreed on "*offering new ICT courses related to the library setting and improving the ones that are already there*". One respondent added:

> *Changing the department's name will not necessarily change courses offered, but if it is adopted the department will definitely work towards offering new ICT courses.*

Another respondent thought that the "*term library still needs to be there because of the traditional courses being taught*". Moreover, the term is "*part of the field and the main employers of our graduates are schools and public libraries*". Generally, respondents disapproved of the name change without the change of the programme's courses offered.

ICT SKILLS DEVELOPMENT

The main three respondent groups presented various ways of developing students ICT skills. Employers appeared to be knowledgeable of the approaches that could be utilised to train and develop students' ICT skills, since they had been training LIS students. They suggested the addition of additional ICT courses to the curriculum. They added that "*ICT courses should have more practise and training*" (Public sector) and there should be "*more specialised teaching staff to teach these courses*". Students should "*work harder on their ICT skills by giving them more activities to do*" (Private sector). One respondent recommended "*a one year foundation course on ICT skills before starting LIS courses with a concentration on English*". Another respondent recommended that an "*Arabic online searching database is needed so they can learn searching skills in their own language first and then apply it in English*". Trying in fact to overcome this issue the department had already started, in 2006, introducing an ICT course in English.

The teaching staff suggested adding a variety of ICT courses and were aware precisely which courses were needed. For example, adding a comprehensive or intensive ICT course, introduction to computer networking, library automation, web page design (as a stand alone course), information searching, database design and development, an ICT general course, internet applications, information analysis and information retrieval. They also thought that some of these courses were already incorporated into the curriculum but "*their content needs to be changed*" and "*they should have a clear policy and a definite description*". One respondent pointed out that these courses "*are taught within other courses and some are taught to the males and not the females*". Another respondent added that the "*students need to be trained more on these skills and given the same opportunities of education*". Other teaching staff recommended giving students more assignments and quizzes.

The students' responses also suggested various ways to develop their ICT skills:

- "*Testing our* (students') *ICT skills before entry to develop them according to the job market needs*". (1st year)
- "*ICT courses should be added starting from the first semester*". (1st year)
- "*The Ministry of Education should add a comprehensive ICT course during our* (students') *previous education*". (1st year)
- The need for more ICT courses, more training and more specialised teaching staff to teach these courses. (4th year)
- "*Providing self training programmes*". (4th year)
- "*The ICT courses should be compulsory, instead of four electives*". (4th year)
- "*Teaching staff at the DLIS should develop their ICT skills especially those teaching traditional courses*". (4th year)

These are all good ways of developing the students' ICT skills, but as mentioned by one member of the teaching staff it is actually a combination of things that develop students ICT skills. It "*depends on the students' ICT skills level, their interest in the subject, the practise of these skills and on the teacher instructing the subject*" to develop these skills. Another teaching staff respondent pointed out:

> *I'm very optimistic of the future because the Ministry of Education has added ICT courses starting from primary school and this gives better educational opportunities to students.*

3. CONCLUSION

The study has provided insights, suggestions, and recommendations into the development of students' ICT skills, training, curriculum, the job market needs and the factors affecting the development of ICT skills negatively

or positively. Other related issues were also presented to complement the main themes.

The qualitative research findings suggested that there was a lack of common understanding of ICT, the term itself was not commonly used; database maintenance and web page construction were not practised in some organisations and in the female section of the DLIS; students lacked some ICT skills, however males had a better ICT skills level than females; students had not gained ICT skills during their previous education nor was there enough training through their LIS education; students were trained without a coherent written training plan to develop their ICT skills. The ICT courses taught were inappropriate; the department used traditional methods of learning to teach ICT courses; the curriculum was outdated; guidelines and standards of professional associations were not consulted by the DLIS; and there was no collaboration with employers to meet their needs. These problems were recognised by the teaching staff.

Factors that negatively affected the students' ICT skills development included motivation, English language, interest, gender, social, accessibility, technophobia, lack of time and access to resources.

The current students' ICT skills did not satisfy the job market needs; other ICT skills were also found to be required by the job market including: web 2.0, web 3.0, and metadata; in addition to ICT skills students should also possess other skills such as: analytical thinking skills, human skills, attitudinal skills, Communication skills, team work and problem solving.

Other issues also emerged, such as: teaching staffs ICT skills were not updated; ICT skills were not incorporated into non-ICT courses; in general, respondents disapproved the department's name change which conflicts with changes elsewhere in the world. To develop students' ICT skills it was suggested to: add new ICT courses and intensify the current ICT courses; provide intensive ICT skills training; give students more activities, assignments and quizzes to practice their ICT skills; have the same opportunities of education for both genders; start ICT courses from the first semester; add comprehensive ICT courses during students' previous education; provide more ICT specialised teaching staff; develop the ICT skills of the teaching staff; and offer self training programmes.

3. FURTHER RESEARCH

The research added provided insight into the students' ICT skills situation in DLIS through the analysis of the qualitative data. The data collected through this method needs to be supplemented and supported by data collected via the quantitative methods. This will be reported in a subsequent publication.

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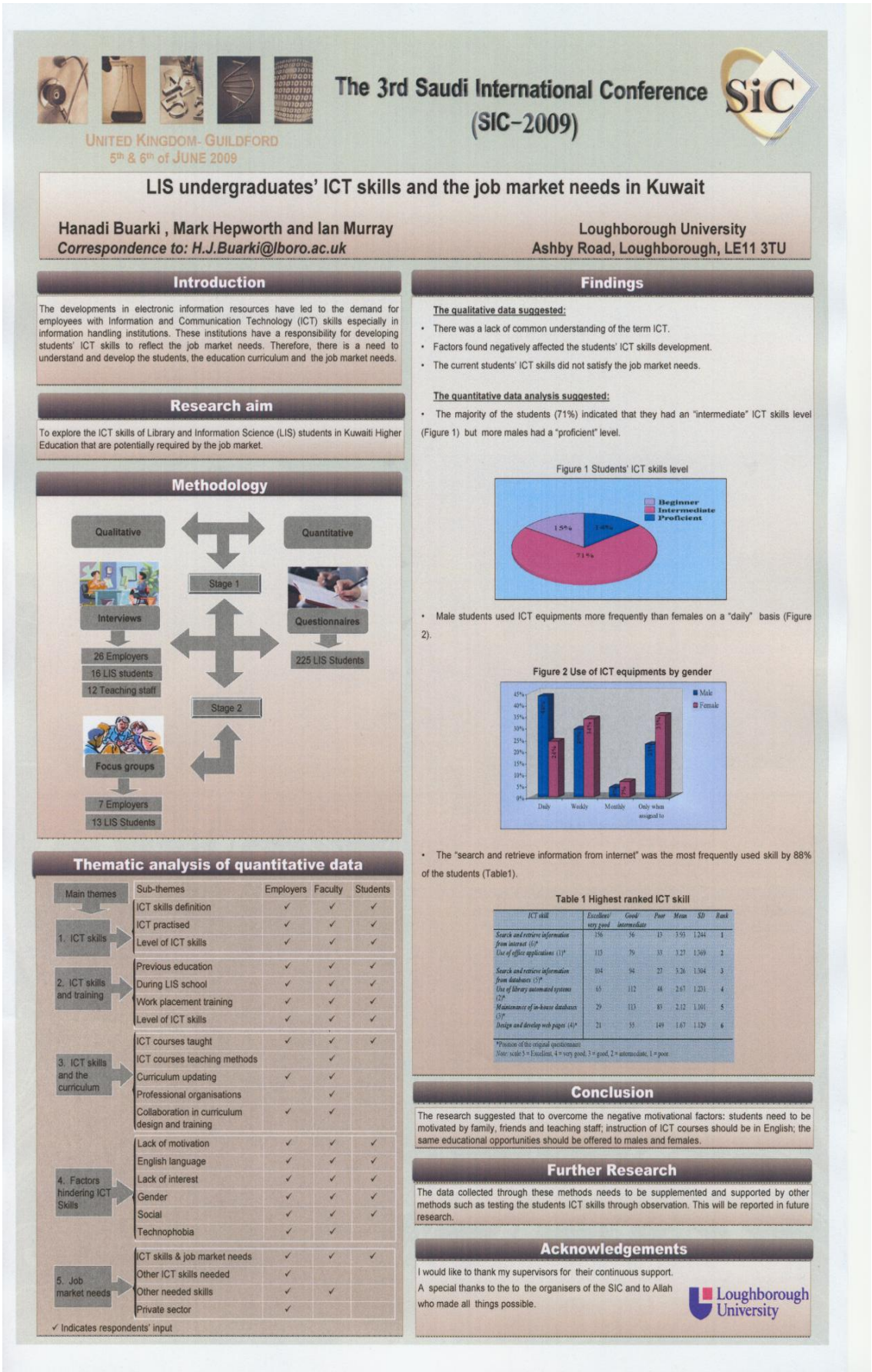
Appendix 2. Research poster presentation



The 3rd Saudi International Conference (SIC-2009)

UNITED KINGDOM- GUILDFORD
5th & 6th of JUNE 2009

SiC

LIS undergraduates' ICT skills and the job market needs in Kuwait

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Introduction

The developments in electronic information resources have led to the demand for employees with Information and Communication Technology (ICT) skills especially in information handling institutions. These institutions have a responsibility for developing students' ICT skills to reflect the job market needs. Therefore, there is a need to understand and develop the students, the education curriculum and the job market needs.

Research aim

To explore the ICT skills of Library and Information Science (LIS) students in Kuwaiti Higher Education that are potentially required by the job market.

Methodology

Qualitative

Quantitative

Stage 1

Interviews

26 Employers
16 LIS students
12 Teaching staff

Questionnaires

225 LIS Students

Stage 2

Focus groups

7 Employers
13 LIS Students

Thematic analysis of quantitative data

Main themes	Sub-themes	Employers	Faculty	Students
1. ICT skills	ICT skills definition	✓	✓	✓
	ICT practised	✓	✓	✓
	Level of ICT skills	✓	✓	✓
2. ICT skills and training	Previous education	✓	✓	✓
	During LIS school	✓	✓	✓
	Work placement training	✓	✓	✓
	Level of ICT skills	✓	✓	✓
3. ICT skills and the curriculum	ICT courses taught	✓	✓	✓
	ICT courses teaching methods		✓	
	Curriculum updating	✓	✓	
	Professional organisations		✓	
	Collaboration in curriculum design and training	✓	✓	
4. Factors hindering ICT Skills	Lack of motivation	✓	✓	✓
	English language	✓	✓	✓
	Lack of interest	✓	✓	✓
	Gender	✓	✓	✓
	Social	✓	✓	✓
	Technophobia	✓	✓	
5. Job market needs	ICT skills & job market needs	✓	✓	✓
	Other ICT skills needed	✓		
	Other needed skills	✓	✓	
	Private sector	✓		

✓ Indicates respondents' input

Findings

The qualitative data suggested:

- There was a lack of common understanding of the term ICT.
- Factors found negatively affected the students' ICT skills development.
- The current students' ICT skills did not satisfy the job market needs.

The quantitative data analysis suggested:

- The majority of the students (71%) indicated that they had an "intermediate" ICT skills level (Figure 1) but more males had a "proficient" level.

Figure 1 Students' ICT skills level

- Male students used ICT equipments more frequently than females on a "daily" basis (Figure 2).

Figure 2 Use of ICT equipments by gender

- The "search and retrieve information from internet" was the most frequently used skill by 88% of the students (Table1).

Table 1 Highest ranked ICT skill

ICT skill	Excellent/ very good	Good/ intermediate	Poor	Mean	SD	Rank
Search and retrieve information from internet (6)*	156	56	13	3.93	1.244	1
Use of office applications (1)*	115	79	33	3.27	1.369	2
Search and retrieve information from databases (5)*	104	94	27	3.26	1.304	3
Use of library automated systems (2)*	65	112	48	2.67	1.221	4
Maintenance of in-house databases (3)*	29	113	83	2.12	1.101	5
Design and develop web pages (4)*	21	55	149	1.67	1.129	6

*Position of the original questionnaire
Note: scale 3 = Excellent, 4 = very good, 3 = good, 2 = intermediate, 1 = poor

Conclusion

The research suggested that to overcome the negative motivational factors: students need to be motivated by family, friends and teaching staff; instruction of ICT courses should be in English; the same educational opportunities should be offered to males and females.

Further Research

The data collected through these methods needs to be supplemented and supported by other methods such as testing the students ICT skills through observation. This will be reported in future research.

Acknowledgements

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Loughborough University

Appendix 3. Research poster presentation

IFLA WORLD LIBRARY AND INFORMATION CONGRESS: 75TH IFLA GENERAL CONFERENCE AND ASSEMBLY
MILAN, ITALY 2009

"Libraries Create Futures: Building on Cultural Heritage" 23-27 August 2009

Loughborough University
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LIS Undergraduates' ICT Skills and the Job Market Needs in Kuwait

Hanadi Buarki, Mark Hepworth and Ian Murray. *Correspondence to:* H.J.Buarki@lboro.ac.uk

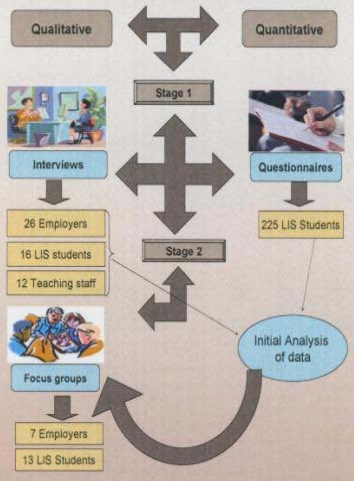
Introduction

In Kuwait, and elsewhere, developments in electronic information resources have led to the demand for employees with Information and Communication Technology (ICT) skills especially in information handling institutions. There is, therefore, a need to prepare the students for this workplace. As a result, it was decided to investigate: the ICT skills of current Library and Information Science (LIS) students; the needs of employers and the LIS curriculum in Kuwait. In addition the factors that had an impact on students' ICT skills were investigated.

Research aim

To explore the ICT skills of LIS students in Kuwaiti Higher Education (HE) that are potentially required by the job market.

Methodology and research sample



Thematic analysis of qualitative data

Main themes	Sub-themes	Employers	Faculty	Students
1. ICT skills	ICT skills definition	✓	✓	✓
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	Level of ICT skills	✓	✓	✓
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	During LIS school	✓	✓	✓
	Work placement training	✓	✓	✓
	Level of ICT skills	✓	✓	✓
3. ICT skills and the curriculum	ICT courses taught	✓	✓	✓
	ICT courses teaching methods	×	✓	×
	Curriculum updating	✓	✓	×
	Professional organisations	×	✓	×
	Collaboration in curriculum design and training	✓	✓	×
4. Factors hindering ICT Skills	Lack of motivation	✓	✓	✓
	English language	✓	✓	✓
	Lack of interest	✓	✓	✓
	Gender	✓	✓	✓
	Social	✓	✓	✓
	Technophobia	✓	✓	×
5. Job market needs	ICT skills & job market needs	✓	✓	✓
	Other ICT skills needed	✓	×	×
	Other needed skills	✓	✓	×
	Private sector	✓	×	×

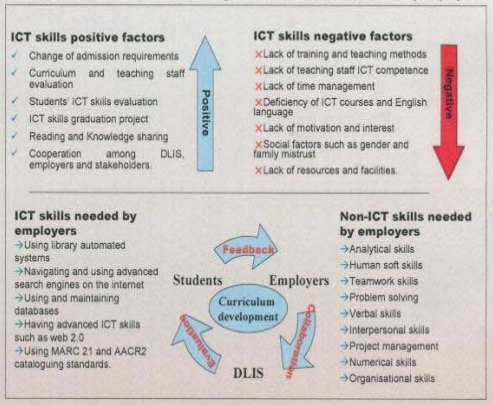
✓ Indicates respondents' feedback to each of the sub- themes.
× Indicates respondents had no feedback.

Findings

The qualitative data suggested:

- Factors were found that negatively affected the students' ICT skills development (Figure 1).
- The current students' ICT skills did not satisfy the job market needs, the findings suggested that they should possess other skills to become information professionals (Figure1).

Figure 1 ICT skills positive and negative factors and those needed by employers



The quantitative data analysis suggested:

- The majority of the students (71%) indicated that they had an "intermediate" ICT skills level but more males had a "proficient" level.
- Male students used ICT equipments more frequently than females on a "daily" basis.
- The "search and retrieve information from internet" was the most frequently used skill by 88% of the students (Table1).

Table 1 Highest ranked ICT skill

ICT skill	*Excellent/ very good*	*Good/ intermediate*	*Poor*	*Mean*	*SD*	*Rank*
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*Design and develop web pages (4)**	21	55	149	1.67	1.129	6

*Position of the original questionnaire
Note: scale 5 = Excellent, 4 = very good, 3 = good, 2 = intermediate, 1 = poor.

Conclusion

The research suggested that to overcome the negative motivational factors: students need to be motivated by family, friends and teaching staff; instruction of ICT courses should be in English; the same educational opportunities should be offered to males and females.

ICT skills development through education and employment

Further research

The data collected through these methods needs to be supplemented and supported by other methods such as testing the students ICT skills through observation. This will be reported in future research.

Appendix 4. Curricula Consensus of the IT–oriented Courses among the Four LIS Schools (He 1999)

Curricula Consensus of IT-oriented Courses	Course Descriptions
Database Systems	Theories, models and implementation of database systems; database design, administration and evaluation; bibliographic, non-bibliographic and full-text databases; use of database management systems.
Information Storage and Retrieval	Theory and practice of information storage and retrieval; media for information storage and technologies for information retrieval; information retrieval systems design and implementation; user interfaces and evaluation of information retrieval systems; database and expert systems in information retrieval.
Information Systems	Introduction to information systems: concepts and processes; retrieval-based information services such as archives, databases, libraries and information centers; design and implementation of information systems for acquisition, circulation or cataloging; selection, use and evaluation various information systems.
Library Automation	Computer-based applications and systems including MARC, bibliographic utilities, circulation systems and online catalogs; technological issues related to computerized reference services, acquisitions and serial control; selecting and implementing library automation systems for variety of library types and sizes.
Multimedia and Interactive Technology	Concepts of multimedia and interactive technology for information presentation and transfer; selection and utilization of multimedia resources such as films, videos and sound recordings in a computer-based environment; learning theory, technological policy and social issues relating to multimedia and interactive technology.
Online Information Retrieval	Development and implementation of online library systems in libraries and information centers; use of online sources of bibliographic and non-bibliographic data; online database design; online information search; in-depth training in online cataloging; impact of online services on library and information systems.
System Analysis	Introduction of concepts and processes in system analysis; application of system analysis techniques to information services, roles of system analysts in library and information centers; analysis and evaluation of existing information systems.

Appendix 5. List of Core Areas in the CILIP Course Accreditation Checklist

Information Generation Communication and Utilization

- Principles of information science
- Identification and analysis of information flows and resources
- Principles of collection and data management
- Knowledge organization and information retrieval
- Information evaluation
- Data restructuring and information presentation

Information Management and Organizational Context

- Development & Provision of Information Services and Products
- Strategic tactical and financial planning of information services
- Information services marketing and business development
- Quality issues and liability
- Information service performance assessment
- Information system / organization analysis
- Analysis of User Education Needs
- User Studies and Education

Information Systems / Information and Communication Technologies

- Specification, identification, analysis, implementation, evaluation and utilization of manual and electronic systems and tools

Information Environment and Policy

- Legal and regulatory issues
- Professional and ethical issues
- International and trans border information transfer
- Regional, national and international information policies and issues

Management and Transferable Skills

- Human resource management
- Training and development
- Financial and budgetary management
- Statistical analysis
- Research methods
- Project management
- Language skills
- Communication/interpersonal skills
- Practical experience

Appendix 6. DLIS Kuwait syllabus outline

Major Sheet for The Bachelor Degree Program in Library and Information Science

Specialization Requirements for graduation (60 credit hours)[*]

Requirements	Course No.	Credits	Hours	Course Title	Prerequisite	Maximum section size	Computer lab Per Week	Technical Lab 1 Per Week	Technical Lab 2 Per Week
24 Credits	LIS 112	3	3	Introduction to Library and Information Science	---		--	--	--
	LIS 122	3	4	General Information Sources and Services	---	35	--	2	--
	LIS 232	3	4	Collection Development	LIS 122	25	--	2	--
	LIS 235	3	4	Bibliographic Description	LIS 122	25	--	--	2
	LIS 237	3	4	Introduction to Subject Analysis	LIS 235	25	--	2	--
	LIS 340	3	3	Management of Libraries and Information Centers	LIS 232	35	--	--	--
	LIS 341	3	4	Information Services	LIS 340	25	--	2	--
	LIS 345	3	4	Introduction to Computers in Libraries	LIS 340	15	4	--	--
6 Credits	LIS 223	3	4	Information Resources in Arabic Literature	LIS 122	25	--	2	--
	LIS 225	3	4	Information Resources in Social Sciences	LIS 122	25	--	2	--
	LIS 227	3	4	Information Resources in Humanities	LIS 122	25	--	2	--
	LIS 228	3	4	Information Resources in Science and Technology	LIS 122	25	--	2	--

[*]Also required (by the college) for graduation 30 credits of general knowledge courses, 40 credits of education and psychology courses (9 of which are library field training).

Requirements	Course No.	Credits	Hours	Course Title	Prerequisite	Maximum section size	Computer lab Per Week	Technical Lab 1 Per Week	Technical Lab 2 Per Week
9 Credits	LIS 335	3	4	Cataloging (descriptive and analytical)	LIS 235	25	--	--	2
	LIS 336	3	4	Subject Bibliography	LIS 237	25	--	--	2
	LIS 337	3	4	Indexing and Abstracting	LIS 237	25	--	--	2
	LIS 338	3	4	Classification and Organization of Knowledge	LIS 237	25	--	--	2
	LIS 339	3	4	Subject Headings and Thesauri Construction	LIS 237	25	--	--	2
12 Credits	LIS 441	3	4	Electronic Information Organization (advanced)	LIS 345	15	4	--	--
	LIS 442	3	4	Management of Databases Systems	LIS 345	15	4	--	--
	LIS 443	3	4	Communication Systems in Library & Information Services	LIS 345	15	2	--	--
	LIS 444	3	4	Information Storage and Retrieval Systems	LIS 345	15	4	--	--
	LIS 446	3	4	Software Evaluation	LIS 345	15	4	--	--
	LIS 447	3	4	Electronic Information Sources	LIS 345	15	4	--	--
	LIS 213	3	3	Modern and Electronic Publishing	LIS 122	15	4	--	--
	LIS 350	3	3	Information Marketing	LIS 341	25	--	--	--
9 Credits	LIS 362	3	3	Children and Adolescent Literature and Services	LIS 341	35	--	1	--
	LIS 462	3	3	National Libraries	LIS 341	35	--	--	--
	LIS 463	3	3	School Libraries and Learning Resources Centers	LIS 341	35	--	--	--
	LIS 464	3	3	Public Libraries	LIS 341	35	--	--	--
	LIS 465	3	3	Academic Libraries	LIS 341	35	--	--	--
	LIS 466	3	3	Special Libraries	LIS 341	35	--	--	--
	LIS 475	3	3	Records Management	LIS 237	35	1	--	2
	LIS 476	3	3	Archival Management	LIS 340	35	1	--	2

Courses offered by The Department of Library and Information Science in the area of general knowledge (college requirements are 30 credits in this area):

Requirements	Course No.	Credits	Hours	Course Title	Prerequisite	Maximum section size	Computer lab Per Week	Technical Lab 1 Per Week	Technical Lab 2 Per Week
30 Credits from all courses offered in this area	LIS 101	2	3	Libraries and its use	--	35	--	--	--
	LIS 202	2	2	English Readings in Librarianship	--	35	--	--	--

Appendix 7. LIS Students' questionnaire

Loughborough University

Department of Information Science

Questionnaire on students' ICT skills in the DLIS

Dear Student,

I am a PhD research student at Loughborough University in the UK. I am gathering information and data for the aim of studying the level of ICT skills in Kuwaiti Higher Education that are needed by the Kuwaiti market. The outcome of this research will assist the Library & Information Science dep artment in curriculum revision. It will also provide an indication as to how ICT skills can be enhanced among the LISD students. I would therefore appreciate your participation in this questionnaire.

Please note that your participation is voluntary and will be treated in confidence. You can withdraw at any time and with no obligations. Please return the completed questionnaire, during the lecture, to the researcher.

Thank you,
Hanadi Buarki
Research Student
Loughborough University

ICT skills, for the purpose of the research, are defined as:

Skills that LIS students need to access, evaluate, communicate information and produce documents electronically using computers and communication technologies. These ICT skills include:

- Using office applications (Word, Excel, Power point etc.);
- Using and managing library automated systems (acquisition, catalogues, circulation, current awareness);
- Maintaining in-house databases;
- Designing and developing web pages;
- Searching and retrieving information from databases and the internet.

1

Section One: Personal information
Please read each question and tick the appropriate answer.

1. Please indicate your year of study:
   - ☐ 1st year
   - ☐ 4th year
2. Please indicate your gender?
   - ☐ Male
   - ☐ Female
3. What kind of previous education did you have?
   - ☐ Public education (Government schools)
   - ☐ Private education (Private schools)

Section Two: ICT skills
Please read each question and tick the appropriate answer.

4. Where did you learn to use ICT equipment? (please tick all that applies)
   - ☐ Previous education (primary – secondary – high)
   - ☐ LIS School (courses)
   - ☐ On my own
   - ☐ Friends
   - ☐ Private lessons (institutes - private tutors)
5. How often do you use ICT equipment?
   - ☐ Daily
   - ☐ Weekly
   - ☐ Monthly
   - ☐ Only when assigned to
6. Where do you use ICT equipments? (please tick all that applies)
   - ☐ Home
   - ☐ Internet cafe
   - ☐ Public library
   - ☐ LIS school
7. How would you rate your current ICT skills level?
   - ☐ Proficient
   - ☐ Intermediate
   - ☐ Beginner
8. How would you rate your ICT skills in the following: (please tick the appropriate level)

ICT skill	Excellent	Very good	Good	Inter-mediate	poor
Use of office applications					
Use of library automated systems					
Maintenance of in-house databases					
Design and develop web pages					
Search and retrieve information from databases					
Search and retrieve information from the internet					

9. What benefits do you gain from using ICT? (please tick all that applies)
   - ☐ Entertainment
   - ☐ Time saving
   - ☐ ICT skills improvement
   - ☐ Find needed information
   - ☐ Produce quality course assignments
   - ☐ Other (please specify).....
10. Do yo u use ICT for any of the following? (please tick all that applies)
   - ☐ Office applications
   - ☐ Library catalogues searching
   - ☐ Databases searching
   - ☐ Internet searching
   - ☐ Web page design and construction
   - ☐ Emailing

Section Three: ICT skills training and the curriculum
Please read each question and tick the appropriate answer

11. Can you use ICT on your own or do you need assistance?
   - ☐ On my own
   - ☐ Need assistance
   - ☐ Sometimes need assistance
   - ☐ Prefer not to ask for assistance
12. Who do you as k for assistance, if needed?
   - ☐ Friends
   - ☐ Teachers
   - ☐ Prefer not to ask

13. If ICT skills training will be provided, what form would you prefer?

- ☐ One-to-one (by teaching staff)
- ☐ Group training (by teaching staff)
- ☐ Intensive ICT course (by the DLIS)
- ☐ On line training course (by the DLIS)
- ☐ Self-study

14. Do you think that the degree of ICT skills' training, provided through ICT courses, is sufficient to perform different activities and assignments required by the LISD? (circle the appropriate number)

insufficient	1 2 3 4 5 6	sufficient

15. Do you think that the degree of ICT theoretical teaching, provided through ICT courses, is sufficient to perform different activities and assignments required by the LISD? (circle the appropriate number)

insufficient	1 2 3 4 5 6	sufficient

16. What are the dif ficulties you are facing that are hindering your ICT skills training? (please tick all that applies)

- ☐ Not enough courses offered
- ☐ Not enough teaching staff
- ☐ Teaching staff lack ICT skills
- ☐ Not enough hardware
- ☐ Not enough software
- ☐ Low maintenance
- ☐ Low internet connection
- ☐ Not enough training provided by the LISD
- ☐ Do not have ICT access at home
- ☐ Do not know

Part four: Developing ICT skills
Please read each question and tick the appropriate answer.

17. Have you taken any ICT course to develop your ICT skills from (please tick all that applies):

- ☐ Private institution
- ☐ Online course
- ☐ ICT expert
- ☐ Friends and family
- ☐ Does not apply

18. Do yo u develop your ICT skills because of or in order to (please tick all that applies):

- ☐ Continue your education
- ☐ LIS school requirements
- ☐ Job opportunities (market needs)

19. Are you affected by any of the following in developing your ICT skills? (please tick all that applies)

- ☐ Your gender
- ☐ Your peer influence
- ☐ Your social traditions
- ☐ Your religion
- ☐ Your family
- ☐ Does not apply
- ☐ Other (please specify).....

20. What are the main factors motivating you to learn new ICT skills? (please tick all that applies)

- ☐ Self satisfaction
- ☐ Personal interest
- ☐ Social factors
- ☐ Produce quality course assignments
- ☐ Job opportunities (market needs)

Please circle the appropriate number in the following:

21. Are you motivated in the LISD to develop your ICT skills?

Not motivated	1 2 3 4 5 6	Motivated

22. Are you motivated at home to develop your ICT skills?

Not motivated	1 2 3 4 5 6	Motivated

23. Ho w interested are you in developing your ICT skills?

Not interested	1 2 3 4 5 6	Interested

24. Ho w useful do you find your ICT skills?

Useless	1 2 3 4 5 6	Useful

25. Ho w easy do you find ICT applications?

Difficult	1 2 3 4 5 6	Easy

26. Ho w confident are you in your ICT skills to use different ICT applications?

Not confident	1 2 3 4 5 6	Confident

If you would like to participate in an interview or a focus group to discuss further issues regarding ICT skills, please provide your email or phone number.
Email:.....Tel:.....

3

Thank you for taking the time to complete this questionnaire.

Appendix 8. Employers' Interview

Department of Information Science

Employers' Interview

I am a PhD research student at Loughborough University in the UK. I am gathering information and data for the aim of studying the level of ICT skills in Kuwaiti Higher Education that are needed by the Kuwaiti market. The outcome of this research will assist the Library & Information Science programme in curriculum revision and provide an indication as to how ICT skills can be enhanced among their students, thus providing them with better chances of employment.

You have been selected because you are one of the employers of graduates of the Department of LIS, College of Basic Studies - PAAET; therefore your views are essential to this research. Your participation is voluntary and will be treated in confidence. You can withdraw at any time and without any obligations.

Hanadi Buarki
Tel +9657217077, +447766680350
Email: H.J.Buarki@lboro.ac.uk.

==========

Section one: Interviewee personal details

Name:	Tel. no.:
Date:	Time:
Organisation:	Occupation:
Degree:	Years of experience:

Section two: ICT skills

ICT skills, for the purpose of the research, are defined as:

Skills that LIS students need to access, evaluate, communicate information and produce documents electronically using computers and communication technologies. These ICT skills include:

- Using office applications (Word, Excel, and others);
- Using and managing library automated systems (acquisition, catalogues, circulation, current awareness);
- Maintaining in-house databases;
- Designing and developing web pages;
- Searching and retrieving information from databases and the internet.

1. Are all of these skills practised in your organisation?

2. What other ICT skills do you require for employment?

3. What ICT skills do LIS graduates usually come with?

4. Do they meet your expectations?

5. What ICT skills do they lack?

Section three: ICT skills teaching and training

6. What ICT skills training do you need to provide for graduates when they are employed?

7. Is your organisation consulted in LIS curriculum development?

8. What about ICT skills training needs, is there any cooperation between you and the department regarding this?

9. Do you find training students during pre-employment (work placement) enough to improve their ICT skills?

10. Do you cooperate with the LISD to improve students' ICT skills during pre-employment (work placement)?

11. What are the gaps in ICT skills training that you think should be addressed by the LISD?

Section four: ICT skills barriers

12. In your view, what are the difficulties you face in employing LIS graduates, in terms of their ICT skills?

13. What do you think are the main factors influencing graduates from improving their ICT skills?

14. What do you recommend for improving students' ICT skills?

15. Would you like to give any further details/comments about anything or do you have any questions?

==========

Thank you for the time you spent.

Appendix 9. Teaching staff Interview

Department of Information Science

Teaching staff Interview

I am a PhD research student at Loughborough University, UK. I am gathering information and data for the aim of studying the level of ICT skills in Kuwaiti Higher Education that are needed by the Kuwaiti market. The outcome of this research will assist the Library & Information Science programme in curriculum revision and provide rich information to shape LIS students' ICT skills and assist in their future employment, thus providing them with better chances of employment.

You have been selected for the interview because you are one of the teaching staff instructing ICT course(s) at the LISD, therefore your view is essential to this research. Your participation is voluntary and will be treated in confidence. You can withdraw at any time and without any obligations.
If you have any questions please contact me via email or phone numbers provided below.

Hanadi Buarki
Tel +9657217797, +447766680350
Email: H.J.Buarki@lboro.ac.uk.

==========

Section one: Interviewee personal details

Name:	Tel. no.:
Date:	Time:
Degree:	Academic status:
Years of teaching experience:	
The ICT courses you teach:	

Section two: ICT skills

ICT skills, for the purpose of the research, are defined as:
Skills that LIS students need to access, evaluate, communicate information and produce documents electronically using computers and communication technologies. These ICT skills include:

- Using office applications (Word, Excel, and others);
- Using and managing library automated systems (acquisition, catalogues, circulation, current awareness);
- Maintaining in-house databases;
- Designing and developing web pages;
- Searching and retrieving information from databases and the Internet.

1. Do you think you are offering all of these skills through the current ICT courses?

2. What ICT skills do LIS students usually come with?

3. What other ICT skills do they learn during their LIS studies (not mentioned in the definition)?

4. How would you rate the students' ICT skills level (during the 1st and 4th year)?

5. How often do you update your own ICT skills to provide them to students? Is it a requirement by DLIS or PAAET?

Section three: ICT skills teaching and training

6. Do ICT courses provide both theoretical and practical ICT skills training?

7. Do you think that students are getting sufficient ICT training through ICT courses taught and fieldwork?

8. Do you motivate students to use ICT that leads to develop their ICT skills?

9. How are your ICT courses taught (delivery methods)?

10. What are the most effective ways to teach ICT courses (such as one to one, online, group training, Intensive ICT course, and self-study)?

11. How often is the curriculum updated to provide new ICT courses?

12. Does the department use guidelines/standards of professional associations to enhance the ICT courses offered?

13. Has the department undertaken any sort of collaboration with other LISD in the region to develop the curriculum, revise it, exchange teaching experiences, and include new ICT courses?

14. What ICT courses do you think should be added to the curriculum to enhance students' ICT skills (such as information searching, database application, library automation, ICT general course, introduction to ICT, introduction to computer networking, Internet technologies, information analysis and retrieval, and Web page design)?

15. Do you think changing the department's name from "Library and Information Science" to "Information science" would change the ICT courses offered, their content, and add new ICT courses?

Section four: ICT skills and market needs

16. Are employers consulted when ICT courses are designed to the curriculum?

17. Do you check employers' ICT skills needs?

18. Do you think that the students' ICT skills meet the Kuwaiti market needs?

Section five: ICT skills barriers

19. Does the DLIS provide enough ICT hardware, software, well equipped laboratories, funding, technical support and Internet connectivity for students?

20. In your opinion, what are the main factors preventing students from improving ICT skills?

21. Would you like to give any further details/comments about anything, or do you have any questions?

==========

Thank you for the time you spent.

Appendix 10. Students' Interview

Department of Information Science

Students' Interview

I am a PhD research student at Loughborough University in the UK. I am gathering information and data for the aim of studying the level of ICT skills in Kuwaiti Higher Education that are needed by the Kuwaiti market. The outcome of this research will assist the Library & Information Science programme in curriculum revision and provide an indication as to how ICT skills can be enhanced among its students.

Interviewing you as a student of the LISD is essential to this research. Your participation is voluntary and will be treated in confidence. You can withdraw at any time and without any obligations.

If you have any questions please contact me via email or phone number provided below.

Hanadi Buarki
Tel +9657217797
Email: H.J.Buarki@lboro.ac.uk.

==========

Section one: personal details

Name:	Tel. no.:
Date:	Time:
Level:	Educational background:

Section two: ICT skills

1. Do you know what ICT skills are or was it only when you completed the questionnaire that you became aware of what ICT skills were?
2. What ICT skills do you have from your previous education?
3. How did you learn to use ICT?
4. Have your ICT skills improved since you joined the LIS programme? How would you rate you rate them?
5. What do you think are the ICT skills needs for the Kuwaiti market?
6. What new ICT skills have you acquired since you have joined the LIS programme?

Section three: ICT skills teaching & training

7. As an LIS student, do you think that you (will gain - have gained) the necessary ICT skills training; from your previous education?
   Or from LIS school?
8. Do you (think – find) that ICT is integrated in most LIS courses?
9. Do you think that the ICT courses' content provided by the LISD is catered to equip you with the needed ICT skills for the Kuwaiti market?

Section Four: ICT skills barriers

10. What are the factors affecting you from improving your ICT skills?
11. Did you face any personal experiences, barriers, problems that have hindered the improvement of your ICT skills?

12. Would you like to give any further details/comments about anything, or do you have any questions?

==========

Thank you for your time.

Appendix 11. DLIS head's interview

Department of Information Science

DLIS Head's Interview

I am a PhD research student at Loughborough University, UK. I am gathering information and data for the aim of studying the level of ICT skills in Kuwaiti Higher Education that are needed by the Kuwaiti market. The outcome of this research will assist the Library & Information Science programme in curriculum revision and provide rich information to shape LIS students' ICT skills and assist in their future employment, thus providing them with better chances of employment. The purpose of this interview is to support and recap the data gathered through the academic year 2007-2008. And anticipate changes (if any) done to review and change the curriculum.

You have been selected for the interview because you are the head of the DLIS and instructing ICT course(s), therefore your view is essential to this research. Your participation is voluntary and will be treated in confidence. You can withdraw at any time and without any obligations.

If you have any questions please contact me via email or phone numbers provided below.

Hanadi Buarki
Tel +96597217797, +447766680350
Email: H.J.Buarki@lboro.ac.uk.

==========

Section one: Interviewee personal details

Name:	Tel. no.:
Date:	Time:
Degree:	Academic status:
Years of teaching experience:	

Section two: Recent changes

1. Have entry requirements to the DLIS been changed recently?

2. What are the recent changes to ICT courses (if any)? Has this been done in both cohorts (male and female) to guarantee the same ICT education?

3. What has been added in terms of elective or core courses?

4. Proposed plans to change or add new ICT courses? If yes have any standards been used to achieve this?

5. Has ICT been added to the instruction of non-ICT courses?

Section three: Tests and training

6. Have assessments been done to test the entry-level students' ICT skills level?

7. Any use of online testing assessment or tutorials or new training to improve the students' ICT skills?

8. Training and professional development of teaching staff. What has been done?

Section four: Plans

9. If plans (for example work placement plan) have been changed?

10. Any cooperation plans with employers and other LIS departments to improve ICT skills development?

==========

Thank you for the time you spent.

Appendix 12. Employers' Focus group guide

Department of Information Science

Employers Focus Group Guide

Introduction to the research's aim:

Good evening and welcome to our session. I am a PhD research student at Loughborough University in the UK. I am gathering information and data for the aim of studying the level of ICT skills in Kuwaiti Higher Education that are needed by the Kuwaiti market. The outcome of this research will assist the Library & Information Science programme in curriculum revision and provide an indication as to how ICT skills can be enhanced among their students, thus providing them with better chances of employment.

Discussion Guidelines (5 min.):

- You have been selected because you are one of the employers of graduates of the Department of LIS, College of Basic Studies - PAAET; therefore your views are essential to this research.
- Your participation is voluntary and will be treated in confidence. The outcome of the discussion will be analysed as a whole, your names will not be mentioned in the analysis.
- There is no right and wrong answers in your participation, feel free to take part in this focus group. If you have different opinions feel free to say it.
- The process will be recorded to save my time of taking notes and with the intention that nothing is missed out.
- ---------- is here to take notes and to assist if you need help.

  - Please introduce yourself, your organisation and occupation.

Introducing the topic of the focus group:

This group is organised to discuss further issues related to ICT skills and the market needs. The issues will be discussed in detail in the following themes and questions that you will be participating in.

Opening question (5 min.):

- What can you understand of the term ICT skills?
- What are ICT skills used for in your organisation?

Transition question (5 min.):

- Tell us your view of LIS graduates.
- What about their ICT skills?

Key questions, Exploration issues (40 min.):

1) Graduates ICT skills and market needs.

- What are the strength and weakness in graduates ICT skills?
  Prompt:
  Issues affecting their ICT skills.
  Other needed ICT skills.
  Other needed skills.
  Strategies to improve graduates ICT skills.

2) Collaboration in curriculum design and implementation:

- Do you think you need to be involved in curriculum design and implementation?

- In your view, what are the main barriers for collaboration?

- What are the best processes (strategies) that need to be adopted for effective collaboration?

3) ICT skills learning style.

- Do you believe that the currently used ICT skills training process is effective?
  Prompt:
  Training methods
  ICT courses (curriculum updating).
  Work placement

- Do you think the current training work placement plan is effective? Why?
  Prompt:
  Need of training.

Summary of discussion:

- Important issues and views that have emerged and supported the topic. Is everything covered?

Closing (10 min.):

- How can the students' ICT skills improve?
- Would you like to add any comments to help us improve?
- Thank you for your time and participation.

==========

Appendix 13. Students' Focus group guide

Department of Information Science

Students Focus Group Guide

Introduction to the research's aim:

Good morning and welcome to our session. I am a PhD research student at Loughborough University in the UK. I am gathering information and data for the aim of studying the level of ICT skills in Kuwaiti Higher Education that are needed by the Kuwaiti market. The outcome of this research will assist the Library & Information Science programme in curriculum revision and provide an indication as to how ICT skills can be enhanced among students, thus providing you with better chances of employment.

Discussion Guidelines (5 min.):

- You have been selected because you are the 4th year students' of the Department of LIS, College of Basic Studies - PAAET; therefore your views are essential to this research.
- Your participation is voluntary and will be treated in confidence. The outcome of the discussion will be analysed as a whole, your names will not be mentioned in the analysis.
- There is no right and wrong answers in your participation, feel free to take part in this focus group. If you have different opinions feel free to say it.
- The process will be recorded to save my time of taking notes and with the intention that nothing is missed out.
- ---------- is here to take notes and to assist if you need help.

    - Please introduce yourself and where you have been trained for work placement.

Introducing the topic of the focus group:

This group is organised to discuss further issues related to ICT skills and the market needs. The issues will be discussed in detail in the following themes and questions that you will be participating in.

Opening question (5 min.):

- You have been studying at DLIS for four years, what is your general opinion of the programme?
- What skills did you learn?

Transition question (5 min.):

- What about your ICT skills?
- What can you understand of the term ICT skills? What do you use these ICT skills for?
- What about ICT training and teaching in the department?

Key questions, Exploration issues (40 min.):

Issue 1) Graduates ICT skills and the market needs

- How useful do you think your ICT skills were when you went for work placement training?

Prompt:
Did you think you had the basics?
Are you prepared to work in such organisations?

- What are the strength and weakness in your ICT skills?

Prompt:
Other needed ICT skills.
Other needed skills.
Factors affecting students' ICT skills.

Issue 2) Collaboration in curriculum design and implementation:

- Do you think that DLIS needs to form collaboration with employers in curriculum design and implementation?
- Do you think that DLIS needs to form collaboration with employers to develop your ICT skills?

Prompt:
Private sector.

Issue 3) ICT skills learning style.

- Do you believe that the current training process is effective?

Prompt:
Training methods.
ICT courses (curriculum updating - delivery methods - teaching staff)
Work placement

- Do you think the current training form (work placement plan) is effective? Why?

Prompt:
Need of training.
Choosing places of work placement training.

- What are the most appropriate and preferred learning styles?

Prompt:
Assignments

Summary of discussion:

- Important issues and views that have emerged and supported the topic. Is everything covered, by me?

Closing (10 min.):

- How could you improve your ICT skills?
- Would you like to add any comments?
- Thank you for your time and participation

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Appendix 14. SPSS Codebook

Question No.	Full variable name	SPSS variable name	Coding instructions
	Identification number	ID	Respondent Identification number
1	Year of study	year	1 = 1st year 2 = 4th year
2	Gender	gender	1 = male 2 = female
3	Previous education	Educate	1 = public 2 = private
4	Learn to use	Learn1 Learn2 Learn3 Learn4 Learn5	0 = not ticked 1 = previous education 1 = LIS school 1 = on my own 1 = friends 1 = private lessons
5	Often use	often	1 = Daily 2 = Weekly 3 = Monthly 4 = Only when assigned
6	Where use	Where1 Where2 Where3 Where4	0 = not ticked 1 = Home 1 = Internet cafe 1 = Public library 1 = LIS school
7	Current level	level	1 = Proficient 2 = Intermediate 3 = Beginner
8	Use of office applications	office	1 = poor 2 = intermediate 3 = good 4 = very good 5 = excellent
	Use of library automated systems	systems	
	Maintenance of in-house databases	Maintain	
	Design and develop web pages	Design	
	Search and retrieve information from databases	databases	
	Search and retrieve information from the internet	internet	
9	Benefits of use	Benefits1 Benefits2 Benefits3 Benefits4 Benefits5 Benefits6	0 = not ticked 1 = Entertainment 1 = Time saving 1 = ICT skills improvement 1 = Find needed

Question No.	Full variable name	SPSS variable name	Coding instructions
			information 1 = Produce quality course 1 = Other: Communicating with family abroad (F1st) Keep pace with technology 1 (F1st) 1 (M 4th) Chatting (F 4th) Recognised its importance recently (F 4th) Curiosity (M1st) Searching multiple resources (M1st) Increasing my knowledge (M1st) Making money (M 4th)
10	Uses of ICT	Uses1 Uses2 Uses3 Uses4 Uses5 Uses6	0 = not ticked 1 = Office 1 = catalogues 1 = Databases 1 = Internet 1 = Web page 1 = Emailing
11	Use on own	own	1 = On my own 2 = Need assistance 3 = Sometimes need assistance 4 = Prefer not to ask
12	Who assists	who	1 = Friends 2 = teachers 3 = Prefer not to ask
13	Form of training	Form1 Form2 Form3 Form4 Form5	0 = not ticked 1 = One-to-one 1 = Group training 1 = Intensive ICT course 1 = On line training course 1 = Self-study
14	Degree of training	practical	1 = insufficient 6 = sufficient
15	Theoretical teaching	Theory	1 = insufficient 6 = sufficient
16	Difficulties faced	Difficulty1 Difficulty2 Difficulty3 Difficulty4 Difficulty5 Difficulty6	0 = not ticked 1 = Not enough courses offered 1 = Not enough teaching staff 1 = Teaching staff lack

Question No.	Full variable name	SPSS variable name	Coding instructions
		Difficulty7 Difficulty8 Difficulty9 Difficulty10	ICT skills 1 = Not enough hardware 1 = Not enough software 1 = Low maintenance 1 = Low internet connection 1 = Not enough training provided 1 = Do not have ICT access at home 1 = Do not know
17	Courses taken previously	Courses taken1 Courses taken2 Courses taken3 Courses taken4 Courses taken5	0 = not ticked 1 = Private institution 1 = Online course 1 = ICT expert 1 = Friends and family 1 = Does not apply
18	Reasons of development	Develop1 Develop2 Develop3	0 = not ticked 1 = Continue your education 1 = LIS school requirements 1 = Job opportunities (market needs)
19	Factors affected	Factors1 Factors2 Factors3 Factors4 Factors5 Factors6 Factors7	0 = not ticked 1 = gender 1 = peer influence 1 = social traditions 1 = religion 1 = family 1 = Does not apply 1 = Other: No assistance provided (F1st) Illiterate in ICT usage (F1st) Dislike ICT usage (F 4th) No time 1 (F 4th) + 3 (M 4th) No time, assignments and exams1(F 4th)1(M 4th) Family responsibilities (F 4th) Daily duties (M1st) Inappropriate environment at home (M1st) Inappropriate environment at college (M1st)

Question No.	Full variable name	SPSS variable name	Coding instructions
			English language (M 4th) 2 Curriculum (M 4th) Personal interest (M 4th)
20	Motivation factors	M-factors1 M-factors2 M-factors3 M-factors4 M-factors5	0 = not ticked 1 = Self satisfaction 1 = Personal interest 1 = Social factors 1 = Produce quality assignments 1 = Job opportunities (market needs)
21	DLIS motivation	D-motive	1 = not motivated 6 = motivated
22	Home motivation	H-motive	1 = not motivated 6 = motivated
23	Interested in developing	interest	1 = not interested 6 = interested
24	Skills usefulness	useful	1 = useless 6 = useful
25	Applications easiness	easiness	1 = difficult 6 = easy
26	confident	confide	1 = not confident 6 = confident

Appendix 15. DLIS Approval letter of Students' and Teaching staff Survey

Department of Information Science
Loughborough University Leicestershire LE11 3TU UK
Switchboard: +44 (0)1509 263171 Department: +44 (0)1509 223052

Loughborough University

Dear Dr. ,

Hanadi Buarki is in the process of organising a survey for her PhD research at Loughborough University, UK. She is gathering information and data that are relevant to her research topic: *Exploring students ICT skills at Kuwaiti Higher Education*. The data collected will provide rich information to shape LIS students' ICT skills and assist in their future employment. We would like your kind permission to survey students and staff at the Department of LIS, College of Basic Education, Public Authority of Applied Education and Training.

The aim of the survey is to explore the ICT skills of students in Kuwaiti Higher Education that are needed by the Kuwaiti market. A further aim is to develop a framework for improving and promoting LIS students' ICT skills in Kuwait. The results will also considerably assist the DLIS programme and the researcher in developing and revising the department curriculum and contribute to the provision of well equipped graduates for the workplace.

The participation of participants is voluntary and will be treated in confidence. Their names will not appear on any documentation of the research. I would be grateful if you could help Hanadi through her data collection process and confirm the department's willingness to take part in the survey. If you have any questions please contact me or Hanadi via email or phone numbers provided below.

Thank you for your kind collaboration.

Yours sincerely,

(22.10.07)

Supervisors: Dr. Mark Hepworth or Ian Murray
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Email: H.J.Buarki@lboro.ac.uk.

Appendix 16. Approval Letter of Employers' Survey

Department of Information Science
Loughborough University Leicestershire LE11 3TU UK
Switchboard: +44 (0)1509 263171 Department: +44 (0)1509 223052

Loughborough University

Dear Sir/Madame, *24-10-2007*

I am writing to ask whether you would be willing to take part in a research project concerning *students ICT skills at Kuwaiti Higher Education*. The data gathered will contribute to my PhD research at Loughborough University, UK. The data will provide a rich source of information to help shape the ICT skills training of Library and Information Science (LIS) students. I would therefore like to interview the **Manager of** in your organisation. You have been selected because you are a private sector organisation that may employ graduates of the Department of Library and Information Science, College of Basic Education, Public Authority of Applied Education & Training.

The aim of the survey is to explore the ICT skills of students in Kuwaiti Higher Education that are needed by the Kuwaiti market. A further aim is to develop a framework for improving and promoting LIS students' ICT skills in Kuwait. The results will also considerably assist the DLIS programme and the researcher in developing and revising the department curriculum and contribute to the provision of well equipped graduates for the workplace.

Your participation is voluntary and will be treated in confidence. Your name will not appear on any documentation of the research. I would be grateful if you could contact me, confirming your willingness to take part in the survey. I will then contact you to confirm when the interviews will take place. If you have any questions please contact me or my supervisors via email or phone numbers provided below.

Thank you for your kind collaboration.

Yours sincerely,

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Appendix 17. Profile of Employers

No.	Organisation	Sector	Occupation	Gender	Degree	Experience years
1.	**Kuwait University**	Public	Director	Female	MLIS	30
2.			Assistant director	Female	MLIS	14
3.			Division Head	Female	BA	24
4.			Division Head	Female	BA	12
5.			Library Head	Female	BA	12
6.	**PAAET**	Public	Director	Male	Prof.	25
7.		Public	Assistant director	Male	BA	29
8.		Public	Division Head	Male	BA	13
9.		Public	Division Head	Female	BA	12
10.		Public	Librarian	Female	BA	13
11.		Public	Librarian	Male	BA	12
12.		Public	Librarian	Female	MLIS	8
13.		Public	Librarian	Female	MLIS	7
14.	**KISR**	Public	Information specialist	Female	MLIS	22
15.			Information specialist	Male	MLIS	18
16.			Information specialist	Female	MLIS	12
17.	**ME**	Public	Observer of professional affairs	Male	BA	9
18.			Information specialist	Female	BA	5
19.			Information specialist	Female	BA	5
20.	**Gulf Investment Collaboration**	Private	Library head	Female	BA	16

No.	**Organisation**	**Sector**	**Occupation**	**Gender**	**Degree**	**Experience years**
21.	**Kuwait Chamber of Commerce and Industry**	Private	Librarian	Female	BA	12
22.	**Albabtain Library**	Private	Library director	Female	BA	35
23.	**American University of Kuwait**	Private	Library director	Male	PhD	37
24.	**Gulf University of science and technology**	Private	Librarian	Female	MLIS	17
25.	**Albayan bilingual School**	Private	Information specialist	Female	MLIS	20
26.	**Universal American School**	Private	Library director	Female	MLIS	21

Appendix 18. Profile of ICT Teaching Staff at DLIS

No	Academic status	Gender	Degree	Experience	ICT courses taught
1.	Professor	Male	PhD	25 years	• Computer in the library (preliminary) • Computer in information organisation (advanced) • Information marketing • Information electronic tools
2.	Assistant professor	Male	PhD	7 years	• Information retrieving systems • Computer database systems administration • Information electronic tools • Computer in the library (preliminary) • Computer in information organisation (advanced) • Communication systems in library services
3.	Assistant professor	Male	PhD	36 years	• Computer in the library (preliminary) • Communication systems in library services
4.	Assistant professor	Male	PhD	15 years	• Computer in the library (preliminary)
5.	Assistant professor	Male	PhD	7 years	• Information electronic tools • Modern and electronic publishing • Computer in the library (preliminary) • Computer in information organisation (advanced)
6.	Assistant professor	Male	PhD	5 years	• Computer in the library (preliminary) • Computer in

No	Academic status	Gender	Degree	Experience	ICT courses taught
					information organisation (advanced) • Communication systems in library services • Modern and electronic publishing • Computer database systems administration • Information electronic tools • Information marketing
7.	Assistant professor	Male	PhD	16 years	• Evaluating Information automated programs
8.	Assistant professor	Female	PhD	10 years	• Computer in the library (preliminary) • Computer in information organisation (advanced) • Communication systems in library services • Information Retrieving Systems
9.	Assistant professor	Female	PhD	5 years	• Computer in the library (preliminary)
10.	Practical training teacher	Female	MLIS	7 years	• Computer in the library (preliminary) • Computer in information as a T.A. organisation (advanced) • Information Retrieving Systems as a T.A.
11.	Practical training teacher	Male	MLIS	4 years	• Computer in the library (preliminary) • Computer in information organisation (advanced) as a T.A. • Information electronic tools as a

No	Academic status	Gender	Degree	Experience	ICT courses taught
					T.A. • Information marketing as a T.A. • Information Retrieving Systems as a T.A.
12.	Laboratory teacher	Female	MLIS	1 year	• Computer in the library (preliminary) as a T.A. • Modern and electronic publishing as a T.A

Appendix 19. Profile of interviewed DLIS students

No.	Gender	Year of study	Previous education	ICT skills level
1.	Male	1st year	Public	Good
2.	Male	1st year	Public	Good
3.	Male	1st year	Public	Good
4.	Male	1st year	Public	Very good
5.	Male	4th year	Public	Acceptable
6.	Male	4th year	Public	Very good
7.	Male	4th year	Public	Very good
8.	Male	4th year	Public	Very good
9.	Female	1st year	Public	Acceptable or less
10.	Female	1st year	Public	Acceptable
11.	Female	1st year	Public	Intermediate
12.	Female	1st year	Public	Very good
13.	Female	4th year	Public	Good
14.	Female	4th year	Public	Very good
15.	Female	4th year	Public	Very good
16.	Female	4th year	Public	Excellent