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 The LIS curriculum is outdated and the department uses traditional methods to teach ICT courses.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 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 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).

4. 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.

5. 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.

5.2.2 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)

5.2.3 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.

5.2.4 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".

5.2.5 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.

5.2.6 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.*

6. 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.

7. 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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