

LIBRARY AND INFORMATION SCIENCE EDUCATION IN THE 21ST CENTURY

Report of a Needs Assessment Study for Training of LIS Professionals in Kenya

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Foreword

The purpose of this study was first, to assess the status of the job market for LIS professionals in Kenya and the adequacy of current curricula and training resources in LIS training institutions in the country. Secondly, the study aimed at identifying priority areas of training and critical IT skills required by LIS professionals in relation to current job market and performance requirements. Using a survey research design data was collected from various categories of LIS stakeholders: students, lecturers, professionals and employers. In total 110 subjects were selected for this study using various sampling techniques and a response rate of 76.4% was achieved. Questionnaires with closed and open-ended questions were used to collect data. This was a descriptive study and therefore descriptive statistics were used.

According to the findings of this study, a job market for LIS professionals in Kenya is perceived to exist. However there is a general observation that the current LIS training programmes in the country do not sufficiently address current job market requirements due to: inadequate teaching resources in LIS training institutions; lack of adequate ICT content in the courses; courses that are irrelevant to the job market and inadequate length of industrial attachment. The report recommends review of the current LIS curricula in Kenya in order to enhance the suitability of graduates to the current labour market. This includes integration of modern ICT into training, recruitment of qualified teaching staff, ensuring adequate learning resources and facilities, and enhancement of industrial attachment.

This is not a comprehensive evaluation of library and information science courses in Kenya. However it reviews some of the critical issues that planners of modern library and information science courses have to consider. These include the implications of the 'information society', the multidisciplinary heritage of LIS education, the choice between liberal vis-à-vis technical education, the emergence of the concept of 'digital library', and finally the need for management and leadership competencies. These issues are critical especially in the sub-Saharan Africa where communities are transition into the 'information economy'.

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EXECUTIVE SUMMARY

RESEARCH CONTEXT

The library and information science field in Kenya is currently characterised by a proliferation of training programmes at all levels of study. Whereas some of the courses are created and offered by local universities and tertiary institutions other are provided through distance learning by foreign institutions. At the same time the global society is characterised by changes that affect practice in information field worldwide. This study was carried out as a contribution to the effort to understand the kind of curriculum for training of Library and Information Science (LIS) professionals that equips its graduates with the right skills, knowledge and values required by the society and the current job market in Kenya.

OBJECTIVES

The general objective of the study was to establish the current training needs of library and information science (LIS) professionals in Kenya. To achieve this, the study focused on four specific objectives:

- i. To assess the status of career and job opportunities for library and information science professionals in Kenya
- ii. To assess perceptions towards the adequacy of curricula and training resources for library and information science professionals in Kenya with respect to the right skills and knowledge for current job market requirements
- iii. To identify areas of training that are critical for information professionals in relation to current career opportunities and job performance
- iv. To identify information technology skills that are critical for information professionals in relation to current job opportunities and performance requirements.

SCOPE OF THE STUDY

Information science is a wide field which includes various disciplines. These include information technology, information management, media and communication studies, publishing and book trade studies, library and information science, archive administration, and records management. Although these areas of training borrow from each other and are underpinned by similar theories, they are distinct professional areas and graduates of each are expected to perform distinct tasks in information organizations.

This study deliberately focused on the current training needs of library and information science (LIS) professionals. This is a hybrid course whereby graduates possess varying levels of expertise centered on the techniques of organizing of knowledge for efficient retrieval information. LIS professionals work in institutions such as: community information centres; public libraries; university and college libraries, records and archives services, research libraries, specialized information centres, electronic

information and database services, publishing and bookselling firms, corporate bodies as knowledge managers, and media houses.

METHODOLOGY

This study used a survey research design. Questionnaires were administered to collect data from various categories of LIS stakeholders. The categories of respondents involved are: employers, lecturers, information professionals and students in LIS field. In total 110 subjects were selected to participate in this study. The two (2) institutions offering degree courses in LIS were included in this study. Ten (10) lecturers were selected from each institution using simple random sampling method. Fifteen (15) undergraduate (finalist) and postgraduate students from each institution were also selected using simple random sampling from each university to participate in the study.

Stratified sampling was used to select (5) information services organizations. Eight (8) subjects (information professionals) were selected using random sampling approach from each of these organizations to participate in the study. Stratified sampling was used to select twenty (20) organizations. One (1) subject (employer) was selected using purposive sampling approach from each of these organizations to participate in the study. All the questionnaires were highly responded to by all categories of respondents. Eventually 84 respondents (76.4%) out of the original sample returned the questionnaires. These included 22 students, 11 lecturers, 35 professionals and 16 employers.

This was a descriptive study and therefore largely descriptive statistics were used. Frequency distributions, percentages were used in analyzing data collected. Statistical Package for Social Sciences (SPSS) was used in data processing.

CHARACTERISTICS AND RESPONDENTS

The sample obtained included a fairly even distribution by sex in all categories except lecturers where males are overrepresented (72.7%). The overall distribution in respondents was 47 (56%) males and 37 (44%) female. The respondents in the students' category were mainly from the undergraduate finalist class specializing in library and information studies. Given their experience, the researcher felt that students in this cohort were more likely to provide useful data on LIS courses in Kenya. However postgraduate students formed 27.3% of the sample. The lecturer category included master's and Ph D holders. However it is significant that 27.3% of this category did not indicate their qualifications.

In the information professional's category, Bachelors' and Masters' degree holders were over represented making up 45.7% and 42.9% respectfully. The remaining respondents were Ph D, diploma holders or did not specify their qualifications. In terms distribution by institutional affiliation, 42.9% were drawn from universities while the rest were from the following institutions: research organizations, business agencies, government departments, development organizations, schools, archives and documentation centres.

The employer category is composed of individuals occupying top management positions in their respective organizations as managers of library and information services and therefore in a position to advise their organizations regarding the recruitment of the right calibre of staff. Respondents in this category were drawn from universities, research agencies, development agencies, government departments, LIS training

institutions archives and public libraries. Notably universities are the leading employers of LIS professionals and contributed 31.3% of the respondents.

FINDINGS

Generally, findings of this study indicate that overwhelming majority of the respondents are of the opinion that there exists a job market for LIS professionals (91.6%). There is no major difference in rating between categories of respondents. Only a few (7.2%) think that a job market does not exist for LIS professionals.

Master's degree received the highest rating as the academic qualification whose prospects in job market are bright. This is followed by Bachelor's and Ph D degree respectfully. Professional areas that were highly rated as possible job markets for LIS professionals include university teaching, academic libraries, web management archiving, record and knowledge management, documentation and research information centres.

From the data collected there is a general observation that the current LIS training programmes do not sufficiently address the current job market. For example 82.3% of the respondents among lecturers, professionals and employers were of the opinion that unless steps are taken to improve the quality of LIS training, in Kenya, persons from other professions will be better placed to perform some information related work/functions traditionally performed by LIS professionals. These include ICT related activities (e.g. website, databases design), information consultancy and dissemination (e.g. research), records management, management activities (e.g. budgeting, procurement), and statistical/information analysis. This indicates a failure of the LIS training in Kenya to accommodate, new areas of specialization in information handling, adapt to changing techniques in LIS training and hence the failure to give professionals the skills relevant to market needs.

On the quality of teaching resources and conditions at LIS training institutions in Kenya less than 50% of the respondents think that the number of relevant IT courses in this programmes is adequate, and that library resources and the length and content of practical attachment is good (good and excellent). Only slightly more than 50% of the respondents felt that the courses offered are relevant to the job market, and are offered in appropriate depth. However 60% and above of the respondents think that the quality of students admitted for LIS courses and teaching personnel is good.

Only 53.6% of the respondents think that subject knowledge (i.e. having knowledge in another field e.g. English, Sociology, Economics, Biology, Mathematics etc. in addition to Library and Information Science) is useful in producing high quality LIS graduates for the current and future job market and job performance requirement. This is compared to 42.8% who think that subject knowledge is not necessary. Subject knowledge is viewed as important in that it equips students with skills and deeper knowledge in specific disciplines in which they can provide services, equips students with broader knowledge necessary for an information worker and brings other professions into the field of LIS which enriches the profession and contributes to its growth.

On the contrary, those who think that subject knowledge is not necessary in producing better LIS graduates argue that, first; LIS is a technical subject which cannot be tied to

any discipline. Secondly, subject knowledge restricts the subject fields in which the professional can operate. Thirdly LIS professionals are often given courses in information structure of various subjects making them able to provide information services in different subject areas. Finally they argue that subject knowledge would be useful mostly to those working in academic libraries.

There is similarity in the ranking of possible LIS areas of study as core or elective courses by students, lecturers, professionals and employers. The courses which were overwhelmingly ranked as core courses by all categories of respondents are: communication skills, management information systems, User/customer services, reference services; information searching and retrieval; database construction; electronic information, knowledge management; cataloguing/classification and indexing; principles of management; subject analysis; research methodology, evaluation of information systems; strategic planning; information/records management and archiving principles. Those which were ranked by all categories of respondents as elective units are: publishing and book trade; information preservation, desktop publishing; non book media; sector specific information services; instructional methods and legal aspects of information.

The following ICT skills were rated by over 50% of each category of respondents as very useful in any curricula for training LIS professionals: hardware and software skills, database construction, website development; digitisation process; electronic information, internet use and evaluation, information storage and retrieval. Other IT courses identified as useful are Electronic publishing, HTML and programming.

CONCLUSION AND RECOMMENDATIONS

This survey was carried out in the context of CUEA strategic plan which projects the design and implementation of a Bachelor of Science in Library and Information Science programme in the 2006/7 academic year. From the study, there is indication that there is a labour market for the graduates of this course. There are a number of indicators to support this conclusion:

- i. Institutions are being expanded and new ones set up all which require more human resource,
- ii. Different sectors of the society need more specialized skills in information management
- iii. There is need to create and expand information services throughout the country
- iv. The adoption of modern ICT requires training in new skills in ICT
- v. Many job vacancies have been noted in the media

Currently there is a rapid proliferation of Library and Information science courses in Kenya. Based on the findings above, this study recommends that though this is a positive development such courses the measures should be implemented to enhance the suitability of its graduates to the current labour market and give them a competitive edge in the job market. These measures include: integration of modern ICT in courses and training; enhancement of industrial attachment; recruitment of qualified teaching staff; and ensuring adequate learning resources and facilities such as books, journals and computers.

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LIST OF ABBREVIATIONS

- ICT- Information and Communication Technology
- IT - Information Technology
- LIS - Library and Information Science

CHAPTER I

BACKGROUND

1.1 Introduction

Kenya has two degree level LIS training institutions: Kenyatta University situated in the outskirts of Nairobi and Moi University, which is located in the western region of the country (Ocholla, 2006). Kenyatta University offers both undergraduate and postgraduate LIS programmes. The undergraduate programme has two types of degree courses. In the first programme, students taking Bachelor of Education (B.Ed) study library science alongside other teaching subjects. The original was to train teacher-librarians for secondary schools (Ocholla, 1995). However its graduates have found employment in libraries and other types of information services. In the second programme, students study library and information science courses only, leading to a Bachelor of Library and Information Science (BLIS). The school also offers a general master's degree in library and information science.

Moi University's Faculty of Information Sciences offers undergraduate, masters and PhD degrees in information sciences. The undergraduate programme follows an integrated approach by teaching library and information studies, archives and records management, publishing, book trade and information technology under one degree Bachelor of Science (Information Science) (Ocholla, 1995). At the beginning of the programme, all students take core units that cut across the information field as well as courses in humanities, natural sciences or social sciences. In the final year students specialize in one particular field of information science. Students also spend eight weeks on practical attachment

Apart from these degree courses, there are diploma and certificate courses provided by government run and privately owned tertiary institutions such as the Kenya Polytechnic (KP), The Kenya Technical Teachers College (KTTC) and the Kenya School of Professional Studies (KSPS). There are also degree courses provided in Kenya through distance learning by foreign institutions. The best example of foreign institutions providing distance learning in Kenya is the University of South Africa (UNISA).

A number of factors emphasize the need to redefine the role of LIS professionals and design curricula that effectively responds to societal needs. Such curricula should be based on job market information and the need for competencies that lead to the development of the field. The emergence of the so-called "information society" is characterized by generation of unprecedented large amounts of information. This has led to an information divide whereby some societies or segments of the society experience 'information glut' whereas others are not able to access critical information. This has added another dimension to the gap between the rich and the poor (Gore, 2000; Mutula 2005). Such a situation calls for a new kind of professional with values such as advocacy and novel skills of locating, organizing, repackaging, and disseminating information for various user populations.

In the increasingly knowledge economy, information is a vital resource in economic, social and political life and skills of information handling in all sectors are more than ever in great demand (Mackay, Maples and Reynolds, 2001). The increasing demand for information has brought to the fore the question of the kind of knowledge and skills that are needed by information professionals (Ocholla, 2000; Hjørland, 2002). As a result LIS

training programmes worldwide are reinventing themselves and developing new curricula to produce information professionals with the right knowledge and skills to suit changes in societal needs, the labour market and developments in ICT (Johnson, 1999, Hjørland, 2002; Juznic and Badovinac, 2005).

Recent trends in ICT have witnessed developments in internet and multimedia technology which is the key to the vastly increasing speed and quantity of information transfer across the global networks. There is a proliferation of electronic resources such as e-journals, e-databases, e-archives, and digital libraries. The adoption of a wide range of ICTs calls for training that enables graduates to develop information systems which help people to meet their information needs efficiently.

The purpose of this study was investigate the types of skills, knowledge and values that are needed by LIS professionals in Kenya if they are to fulfill the current information needs of the society, operate efficiently with the fast changing ICTs and above all fit in the highly competitive information sector job market. This included making a general assessment of current LIS courses in Kenya so as to identify any shortcomings and make appropriate recommendations. This study was conducted between November 2005 and March 2006.

1.2 Statement of the Problem

Worldwide training programmes at all levels are reinventing themselves and developing new innovative curricula to train information professionals with skills and knowledge to handle information in various sectors and to use modern information and communication technology. This diversification has been in response to new job opportunities and requirements and the pressure to balance between the core objects of LIS education and attracting new topics. We have already highlighted several emergent factors that have a bearing on practice of information work and which are critical to the training of library and information science professionals. These include first, the emergence of the so-called 'information society' and the resulting centrality of information in all sectors of the society, and secondly, the impact of modern information and communication technology. Third is the emergence of other professions, which like library and information science professionals are involved in information handling. Fourthly, there has been a running debate whether information professionals should have a subject base or specialization. The question here is: Does subject knowledge (i.e. having knowledge in another field e.g. English, Sociology, Economics, Biology, Mathematics etc.) in addition to Library and Information Science produce better LIS graduates for the current and future job market and job performance requirements?

All the above factors emphasize the need to redefine the library and information professionals of tomorrow and design a curriculum that effectively responds to societal needs. Such a curriculum should be based on job market information and the need for competencies that lead to the development of the field. Therefore the study problem for this research was this: what are the skills and knowledge that the LIS professionals in Kenya should have if they are to fulfill the information needs of the society, operate efficiently with the fast changing techniques of information management and above all fit in the highly competitive information sector job market?

1.3 Objectives of the Study

The general objective of the study was to establish the current training needs of library and information science (LIS) professionals in Kenya. To achieve this study focused on four specific objectives:

- v. To assess the status of career and job opportunities for library and information science professionals in Kenya
- vi. To assess perceptions towards the adequacy of curricula and training resources for library and information science professionals in Kenya with respect to the right skills and knowledge for current job market requirements
- vii. To identify areas of training that are critical for information professionals in relation to current career opportunities and job performance
- viii. To identify information technology skills that are critical for information professionals in relation to current job opportunities and performance requirements.

1.4 Research Questions

- i. What is the current status of job market for LIS professionals in Kenya?
- ii. Are there perceived deficits in the current curricula and resources for training of LIS professionals in Kenya?
- iii. What are the priority areas in LIS training in relation to current job market and performance in Kenya?
- iv. Which ICT skills are critical for LIS professionals in the current job market and performance in Kenya?

1.5 Significance of the study

A review of literature reveals that there exists little information on the training needs of library and information science professionals in Kenya. The emergence of the so-called information society has led to developments such as the need for better control of information, the adoption of internet and other multimedia technologies. This study is significant in that first, it generates information on the skills, knowledge LIS professionals should have in order to function in this changed information landscape.

Secondly, it exposes various gaps in the current programmes for training LIS professionals and makes suggestions on how improvements can be made. The recommendations from this study could be a basis for discussions of issues in library and information science education and a reformulation of curricula for training of professionals are suitable for the current job market and measure up to performance expectations in the LIS field.

1.6 Scope of the Study

Information science is a wide field which includes various disciplines. These include information technology, information management, media and communication studies, publishing and book trade studies, library and information science, archiving administration, and records management. Although these areas of training borrow from each other and are underpinned by similar theories, they are distinct professional areas and graduates of each are expected to perform distinct tasks in information organizations.

This study deliberately focused on the current training needs of library and information science (LIS) professionals. This is a hybrid course whereby graduates are expected to possess varying levels of expertise centered on the techniques of organizing of knowledge for efficient retrieval of information. LIS professionals work in institutions such as: community information centres; public libraries; university and college libraries, records and archives services, research libraries, specialized information centres, electronic information and database services, publishing and bookselling firms, corporate bodies as knowledge managers, and media houses. Considering the scope of information science as a discipline and the depth of information practice, the choice of curriculum for Library and information science (LIS) should reflect the needs of the society as well as job market.

1.7 Limitations of the Study

The researcher observed that there is limited literature on training of library and information science in Kenya. This is partly because little research and writing on this subject. This presented a problem with reviewing the current status of LIS training for purposes of this research.

The researcher faced a number of problems during the course of fieldwork. Given the scattered nature of LIS professionals there was a serious challenge in locating and administering questionnaires on some categories of respondents especially professionals and employers. Accessing employers was particularly difficult as many are the times they were reported to be busy which led to unforeseen delays.

1.8 Conceptual Framework

In order to investigate the requisite competencies of library and information science professionals this study has adopted the conceptual framework proposed by Steinerova (2001) which stresses understanding relationships between users of information and information professionals as well as understanding individuals and communities in the context of the evolving information technologies, culture and information institutions. The result of this linkage is the creation of information services, systems, products, actions and interventions that respond to the needs of the user community. The basic question in training of LIS professionals is how to provide skills, knowledge and values which reflect activities of information professionals (services, systems, products, actions, interventions) and at the same time incorporates the changing technology, information culture and their impact on the society.

It is notable that present technological developments have led to erosion of the traditional borders of information institutions (e.g. libraries, archives etc.) the profession itself is

becoming more important (Steinerova, 2001). That is why techniques of social communication and intercultural issues should be explored based on human characteristics of professional information work. LIS professionals should be able to understand and manage the transition from technological development to changes of culture and relationships of information users and institutions. This will only be possible if training curricula take into account these factors and provide the requisite skills and knowledge.

1.9 Definition of Terms

Library and Information Science: This is the issues related to how information resources are created, organized and used. Educational programs in library and information sciences produce graduates with varying levels of expertise centered on the techniques of organizing of knowledge for efficient retrieval information (Feathers and Sturges, 2003).

Training: This is the process of learning and teaching in a specialist area with the aim of instilling the appropriate skills, values and knowledge so that recipient of such training can perform the expected tasks effectively and efficiently in that particular field (Mbiti, 1986).

CHAPTER II LITERATURE REVIEW

2.1 Introduction

What is the proper domain of LIS? What competencies, skills and attitudes are required of LIS professionals in the society of the 21st century? These questions are central in an ongoing debate on the appropriate training of LIS professionals (Tortensson, 2002). The key issues in this debate include emergence of the so-called 'information society' and the resulting focus on information access in all sectors of the society; developments in ICT and specifically digital libraries. Discussions have also centred on issues like the choice between technical and liberal education (Buckland, 2001); critical research areas (Tortensson, 2002), and unequal access to information based on gender and class (Pawley, 1998; Sturges, 2005).

Marco (1996) also cautions that although librarianship has a lot to benefit from information science, it should remain faithful to its traditional base. Across the divide, Feather and Sturges (2003) argue that information science is in many respects at the centre of the librarians' work and therefore is a legitimate area of study. Van House and Sutton (1996) argue that LIS knowledge base can be applied in other fields and warn against overemphasis of LIS education on libraries as the centre of professional practice especially given the declining opportunities in libraries. The debate is further complicated by the multiple-heritage of LIS in several traditions including the pure and applied sciences, humanities, social science and information technology (Buckland, 2001).

2.2 Current perspectives on LIS education.

Given the competing issues in LIS education a number of proposals have been made. According to Drexel (2000), education for LIS professionals should integrate both human and technical aspects of information systems and exhibit a strong client orientation in service delivery. Feathers and Sturges (2003) argue that there is need to balance between core skills of LIS and those, which apply to specific work environments. Wilson (2001) has proposed six fields that have to be factored in a LIS curriculum:

- i. Information content (the traditional function of library and information centres),
- ii. Information systems (human/systems interaction and organizational systems),
- iii. Information users and providers (information use and information seeking behaviour),
- iv. Information organizations (information producers, libraries and information centres, etc. and their operations),
- v. Supplemental knowledge skills not included in any of the above (such as subject bases e.g. philosophy, history, etc),
- vi. Practicum (prescribed practical experience as a programme of study).

Gorman and Corbitt (2002) propose four areas that encompass the basic knowledge of a present day LIS professional: client needs, management of people and resources, utilization of technology, and organization of knowledge and knowledge resources. The

IFLA (2000) guidelines for education of library and information professionals recommend that the core elements of a LIS curriculum should be:

- i. Information environment (e.g. information policy and ethics),
- ii. Information generation, communication and use,
- iii. Assessing information needs and designing responsive services,
- iv. Organization, retrieval, preservation and conservation of information,
- v. Research analysis and interpretation of information,
- vi. ICT applications in library and information products and services,
- vii. Information resource and knowledge management,
- viii. Management of information agencies, and
- ix. Quantitative and qualitative evaluation of outcomes of information and library use.

A recent study explored the reforms in British LIS education and established a trend in various universities characterized by:

- i. A holistic view of information needs and provision encompassing conventional information services, research functions, records management and application of ICT),
- ii. A level of technical understanding of the new ICTs sufficient to discuss them confidently in dealings with vendors or technical experts, plan and implement changes in information provision,
- iii. Ability to identify and elicit information from non-traditional sources and organize it for effective and efficient retrieval,
- iv. Ability to evaluate, select, re-package and present information to assist users, rather than simply presenting them with a collection of books, bibliographic references, or documents,
- v. High level skills in teaching and the use of information and facilitating the use of information systems by others,
- vi. Greater ability to work with other people, and influence them to support the development of the library and information service, and
- vii. The ability to define and defend the outputs of the information service in terms of the goals and values of the organization (Johnson 1999).

2.3 Implications of the 'information society'

In the increasingly knowledge-economy, information has emerged as the "fourth resource" after land, labour and capital since it constitutes the very foundations of almost every sector of the society (Macgregor, 2005). Further, every aspect of our life is touched by the applications of ICTs, and we increasingly depend on information which we access through them (Rischar, 1996). The increasing reliance of information in all sectors of human activity has led to diversification of information practice and new labour markets (Callison and Tilley, 2001). A broad range of practitioners whose unifying qualifications are skills in creation, dissemination and utilization of information have emerged such as information officers, knowledge managers, curators, and multimedia librarians (Bruce, 1999).

The new ICTs pose a number of challenges to LIS education. First, they have led to "information overload" whereby information has become a source of pollution and frustration (Mizrachi, 1998). This implies that part of the role of information professionals is to assist users in clarifying what they want and access the most relevant

information in the midst of this “information glut”. According to Wang (2003), LIS professionals should have skills to teach users how to create appropriate search strategies that will save time; reduce confusion, package and present information in a coherent, meaningful and relevant way.

Secondly, there is the danger of information divide characterized by serious information shortfall for some sections of the society attributed to a digital divide which refers to unequal access to information technologies based on ethnic, racial, socio-economic and geographical groups (Huang and Russell, 2006). Harris (1992) reports a tendency to ignore the information needs of low-status users such as women and children. According to Mutula (2005) poor access to digital information in rural Sub-Saharan Africa is caused by lack of investments in local digital content, ICT awareness and skills, and policies and internet infrastructure. Norris (2001) has decried the digital divide characterized by unequal internet access between industrialised and developing countries, and the gap between the information rich and the information poor. In countering these problems, LIS education should inculcate values such as advocacy for freedom of information, equity in information access, and use of digital resources as a tool for mobilization and participation in public life.

According to Ocholla (2000) information producers and consumers are rapidly increasing and becoming more diversified which creates complex information demand and use patterns. He therefore argues that LIS as it is now does not reflect the current expansion in the information industry. Chu (2001) reports dissatisfaction with the content of LIS education in China because its graduates are not competitive in new job markets. Consequently he endorses change to deepen education reform, broaden the professional field, and enlarge the labour market (Chu, 2001). Alemna and Cobblah (2005) believe that the LIS professionals should expand their role by widening the applicability of the LIS body of knowledge and competencies.

2.4 Multidisciplinary heritage of LIS education

LIS education spans a broad range of subjects, disciplines, contexts and communities (Saracevic, 1975). In its long history LIS has gained a multiple-heritage and continues to incorporate perspectives from other disciplines (Buckland, 2001; Gorman and Corbitt, 2002). Consequently, LIS has a wide scope of operation and includes all those people involved in the design, management and delivery of information services. Buckland (2001) has identified the heritage behind LIS as including: bibliography; documentation; information retrieval; librarianship; social studies of information; computing; informetrics; communications; archives; publishing; and information systems. In recent times there has been a coalescing of many of these professions in LIS training and practice (Feathers and Sturges, 2003).

Given its interdisciplinary nature, LIS schools are faced with the challenge of selecting combinations of domains that give graduates the best knowledge and skills in line with current paradigm shift in information theory and practice. To embrace information services that address specific targets, LIS schools have to select areas to include in the curriculum, depending on the manpower they would like to produce. This is not a simple task because the boundaries between the specializations of information practice are narrow and there is need for multidisciplinary knowledge shared across the various domains.

2.5 Liberal vis-à-vis technical education

LIS education has tried to strike a balance between theoretical issues and training in the routines and techniques associated with information management (Juznic and Badovinac, 2005; Arms, 2005). Johnson (1999) claims that the entry-level of professional LIS education has been geared towards developing technical skills rather than ability to think. However it is essential that initial professional education provide a foundation of LIS knowledge and understanding, which can stimulate deep interest and involvement in professional developments. Some non-technical issues facing LIS education today are: information ethics; user empowerment; information entrepreneurialism; measuring effectiveness; self promotion and political gamesmanship.

Does subject base (i.e. having knowledge in another field such as English, sociology, economics, biology, mathematics etc. in addition to LIS) produce better LIS graduates? According to Mizrachi (1998) and Buckland (2001) liberal and general education enables LIS professionals to relate information to its subject and social context and gives them generic skills such as rhetoric, critical thinking, quantitative techniques and critical philosophy. Similarly, Buckland (2001) believes that emphasis on professionally useful education discourages interest in the LIS field and argues that a liberal approach allows us to re-examine the foundational issues which leads to growth in the discipline.

2.6 Emergence of the digital library

Digital library is viewed as representing the definite trend for the development of libraries in the future (Zhou, 2005). The term 'digital library' generally implies digitization of library services and making the contents of any repository accessible across electronic networks. There is a general agreement on the following characteristics of digital libraries:

- i. Mass storage of information,
- ii. Availability of information resources in diversified media,
- iii. Electronic delivery of information resources,
- iv. Distributed information resources management,
- v. Sharing of information resources,
- vi. Intelligent retrieval technologies,
- vii. Information access that is unfettered by space and time (Borgman, 1996; Wang, 2003; Xiao, 2003).

The digital library, presents a new paradigm that challenges librarians to rethink their roles in the networked environment (Kibirige and De Palo, 2001). The nature of digital libraries envisions a LIS education that imparts competencies, skills, attitudes and values that enable the professionals manage digital information systems. In a digital environment librarians are expected to perform tasks such as: acquire and organize digital information; plan and provide digital information services; ensure information security; set relative standards and policies for digital library; and protect intellectual property rights in network environments (Sreenivasulu, 2000; Zhou, 2005; JISC, 2002).

2.7 Management and leadership competencies

Libraries and other information services operate within the context of institutional and national politics and have to compete with other sectors in the organization for budgetary allocation (Johnson, 2000). This means that to succeed information managers

should be able to demonstrate the centrality of the information service to the core business of the organisation and to national development. One way to ensure that information professionals are proactive in the political gamesmanship as to influence the distribution of financial resources is to include a leadership component in training courses (Kavulya, 2004).

Similarly, information managers have to engage in effective strategic and operational planning, evaluation and marketing processes; employ ethical and legal decisions; and develop and implement essential information policies and procedures (Winston, 2005). They are expected to practice effective human resource management, demonstrate proficiency in effective interpersonal communication techniques; establish efficient organizational structures; foster collaborative partnerships and networking, design appropriate research studies; promote multiculturalism and use data-based decision making (Johnson, 1999; Gorman and Corbitt, 2002). LIS education should also provide its graduates with skills in teamwork, leadership, time management, interpersonal communication skills, change management, and user empowerment (Winston, 2005). They also need financial awareness to manage the increasingly expensive information resources and demonstrate that their employers are receiving value for money.

2.8 Conclusion

The above discussion underlines the need for reform in LIS curricula to suit the changing job market and societal needs. It has highlighted several emergent factors that have a bearing on practice of information work and which are critical to the training of LIS professionals. First, is the emergence of the so-called 'information society and the resulting centrality of information in all sectors of the society. This is reinforced by a competitive environment, whereby information has monetary value and makes difference between success and failure in every part of the knowledge economy. The second factor is the multi-disciplinary heritage of LIS education which presents a diverse array of competing perspectives and specializations.

Thirdly there a liberal vis-à-vis technical education debate based on the question whether LIS education should focus on theoretical issues or training in the routines and techniques associated with information management. Fourthly, is the emergence of the so-called 'digital library' which has created a need to produce information professionals to be versed with a diversity of ICT tools, hardware, software, formats, platforms, applications and protocols. Fifthly, LIS has to deal with questions concerning the supply of information in diverse disciplines. The field has connections to almost all disciplines and therefore can be studied from numerous perspectives. Finally, all these factors are compounded by a need for management and leadership competencies to such as planning, interpersonal communication, and advocacy. All these factors have to be considered in any effort to develop viable LIS education.

CHAPTER III RESEARCH METHODOLOGY

3.1 Research Design

This study used a survey research design to investigate the training needs of library and information science professionals in Kenya in terms of both knowledge and skills. Data was collected from different categories of respondents who in one way or another are stakeholders in the existing LIS courses. These include students and lecturers in existing library and information science institutions, LIS professionals and their employers.

Sample size and sampling procedures

In total 110 subjects were selected for participation in this study. The two (2) institutions offering degree courses in LIS were included in this study. Ten (10) lecturers were selected from each of these institutions using simple random sampling method. Fifteen (15) students taking LIS course were also selected using simple random sampling from each LIS school to participate in the study. An effort was made to include both undergraduate and postgraduate students.

Stratified sampling was used to select five (5) information service organizations. Eight (8) subjects (information professionals) were selected using random sampling from each of these organizations to participate in the study. Stratified sampling was used to select twenty (20) information services. One (1) subject (employer) was selected using purposive sampling approach from each of these organizations to participate in the study.

3.3 Data Collection Procedures

The study used primary data, which was collected from various categories of stakeholders in library and information science using questionnaires and interview schedules. Questionnaires for different categories of respondents were prepared and pre-tested in pilot applications and then modified as necessary. The principle researcher and 3 research assistants discussed and mastered the research tools and plan for the procedures and approaches in data collection. The selected participants were visited and the questionnaire administered. Clarification on responses to the questionnaires was sought from respondents where necessary.

Research instruments

Questionnaires with closed and open-ended questions were used to collect data from the different categories of respondents namely: students, lecturers, professionals and employers. All questionnaires to the different categories of respondents aimed at collecting data on the respondents' perceptions on similar issues namely: the status of job market for LIS professionals in Kenya, adequacy of current curriculum and training resources in local LIS training institutions, priority areas of training and ICT skills that are critical for information professionals in relation to current job market and performance requirements.

3.5 Data Analysis Procedures

The study used primary data, which was collected from various categories of stakeholders in LIS using questionnaires. Questionnaires for different categories of respondents were prepared and pre-tested in pilot application and then modified as necessary. The content of the questions focused on issues at the centre of the study and which are indicators of a programmes ability to lead to employment, further education as well as some form of quality assurance. Since was a descriptive study, descriptive statistics such as frequency distributions and percentages were used in analyzing data collected. Statistical Package for Social Sciences (SPSS) was used to process the data.

CHAPTER IV PRESENTATION AND DISCUSSION OF FINDINGS

4.1 Background Information on Respondents

This study was carried out to assess, first, the status of career and job opportunities for library and information science professionals and secondly, the adequacy of current curriculum and training resources in LIS training institutions. Thirdly, the study sought to identify priority areas of training of information professionals to fit current career opportunities. Fourthly, the study investigated Information technology skills that are critical for information professionals in relation to the current job performance requirements.

4.1.1 Distribution of respondents by category and sex

Data was collected from various categories of stakeholders of library and information science sector using questionnaires. The respondents included employers, lecturers, professionals and students in the LIS sector. In total 110 subjects were selected including twenty (20) lecturers, thirty (30) students, forty (40) information professionals and twenty (20) employers in information services organizations. All the questionnaires were highly responded to by the various categories of respondents. According to Table 1 a total of 84 (76.4%) respondents returned the questionnaires. This included 22 students, 11 lecturers, 35 professionals and 16 employers. The sample included a fairly even distribution by sex in all categories except the lecturers' category in which males are overrepresented (72.7%). The overall distribution in respondents was 47 (56%) males and 37 (44%) female.

Table 1. Distribution of respondents by category and sex

	Distribution by Sex			
	Male(n =47)		Female(n =37)	
Students	10	45.5%	12	54.5%
Lectures	8	72.7%	3	27.3%
Professionals	20	57.1%	15	42.9%
Employers	9	56.3%	7	43.8%
Total	47	56.0%	37	44.0%

4.1.2. Distribution of respondents by categories and academic status

Data presented in Table 2 shows that respondents in the students' category were mainly from the undergraduate finalist students specializing in library and information studies while postgraduate students formed 27.3% of the sample. The researcher felt that finalists and postgraduate students, given their extended learning experiences are more likely to provide useful data on LIS courses in Kenya.

Table 2. Distribution of students by course of study

<i>Qualification</i>	<i>Percentage (n =22)</i>
Bachelor's Finalists	63.3%
Post graduate' degree	27.3%
No response	9.1 %

According to Table 3 the lecturer category included, Masters' and Ph D holders. However it is significant that 27.3% of this category did not indicate their qualification. In the information professionals category first Bachelors' and Masters' degree holders were over represented making up 45.7% and 42.9% respectfully. The remaining respondents were either Ph D, diploma holders or did not specify their qualifications.

Table 3. Qualifications and institutional affiliation of lecturers and professionals

<i>Qualification</i>	<i>Lecturers (n =11)</i>	<i>Professionals (n =35)</i>
Ph D	36.4%	2.9 %
Masters' degree	36.4 %	45.7 %
Other	-----	2.9 %
postgraduate		
Bachelor's degree	-----	42.9%
Diploma	-----	2.9 %
No response	27.2 %	2.9 %

4.1.3. Institutional affiliation of professionals and employers

Table 4 shows the distribution of employers by institutional affiliation. According to this table, 42.9% of the respondents in the professionals category were drawn from universities while the rest from the following institutions: research organizations, business agencies, government departments, development organizations, schools, archives and documentation centres.

Table 4. Distribution of professionals and employers institutional affiliation

<i>Institutional affiliation</i>	<i>Professionals (n =35)</i>	<i>Employer (n =16)</i>
University library	42.9 %	31.1%
Research organization	5.7 %	6.3%
Business/commercial agency	5.7 %	-----
Government agency/Dept.	8.6 %	18.7%
Development organization	5.7 %	6.3%
School library	2.9%	-----
LIS Institution	-----	6.3%
Public library	-----	12.5 %
Archive	14.3%	6.3%
Documentation centre	5.7 %	-----
Others	-----	12.5 %
No response	8.5 %	-----

The employer category is composed of individuals occupying top management positions in their respective organizations as managers of library and information services and

therefore in a position to advise their organizations regarding the recruitment of the right calibre of staff. Respondents in this category were drawn from universities, research agencies, development agencies, government departments, LIS training institutions archives as well as public libraries. Notably universities are the leading employers of LIS professionals and contributed 31.3% of the respondents.

4.2 Assessing the status of the job market for LIS professionals

4.2.1. General opinion on the status of job market

Since one of the objectives of the project was to assess the status of career and job opportunities for library and information science professionals in Kenya, respondents were asked to state their opinion on the following statement: **“There exists a job market for library and information science professionals in Kenya”**

The data presented in Table 5 indicates that overwhelming majority (91.6%) of the respondents are of the opinion that there exists a job market for LIS professionals in the country. Only a few (7.2%) think that a job market does not exist. There is no major difference in rating between categories of respondents. In the category of students and professionals, 95.4% and 94.3% respectfully agree or strongly agree with the statement. Similarly in the lecturer and employer category, 81.8% and 87.6% of the respondents respectfully agree with the statement. We can conclude that in every category majority of the respondents held the opinion that there exists a job market for LIS professionals.

Table 5. Distribution of opinion on whether there exists a job market for LIS

		Percentage scores (n =84)				
		Students	Lecturers	Professionals	Employers	Total
Agree (Strongly agree & agree)		95.5%	81.8%	94.2%	87.6%	91.6%
Disagree (Agree & Strongly disagree)		4.5%	18.2%	2.9%	12.4%	7.2%
No response		0%	0%	2.9%	0%	1.2%

Respondents were further asked to state why they felt that there exists a job market for LIS professionals. About 50% (42) of them responded to this question and gave a number of reasons. This data is presented in Table 6.

Table 6. Reasons why a job market exists for LIS Professionals

<i>Reasons why job market is perceived to exist</i>	<i>Scores (n =42)</i>
Institutions are being expanded and others set up	30.90%
Need for more specialized information skills	28.6%
Need to create to expand information services	23.8%
Modern ICT requires training in new skills	11.9%
Many job vacancies have been noted in the media	4.8%

4.2.2. The status of the job market for various LIS qualifications

Respondents were asked to rate the job market for various categories of professional qualifications. According to Table 7, in a total of 84 respondents, 75% rated the prospects of a Master's degree in job market as good (good and excellent) while 26.2% felt that the job prospects are fair. In the case of Bachelor's degree 69% and 26.2% of the respondents felt the chances for obtaining a job are good (good and excellent) and fair respectively. A Ph D degree holder was rated by 66.6% and 16.7% of the respondents as having good (good and excellent) and fair chances respectively of obtaining a job in Kenya. Diploma and certificate holders were rated by only 41.5% of the respondents as having a good chance of obtaining a job. Almost half of the respondents (47%) felt that the chance of obtaining a job with a diploma and certificate qualifications is only fair.

Table 7. Rating of job market for various qualifications

Academic qualifications	Rating of job market (n=84)			
	<i>Good (Excellent and good)</i>	<i>Fair</i>	<i>Very poor</i>	<i>No response</i>
Masters' degree	75.0%	26.2%	3.5%	2.4%
Bachelor's degree	69.0%	26.2%	2.4%	2.4%
Ph D	66.6%	16.7%	16.7%	2.4%
Diploma and certificate	41.7%	47.6%	7.2%	3.5%

4.2.3. The status of the job market in various information services

Respondents were asked to rate the labour market in various library and information science areas. According to the data in Table 8, 64.3% and 66.7% of the 84 respondents respectively felt that the job prospects in university teaching and academic libraries were either good or excellent. Other areas rated high in terms of job prospects are: web management, archiving, record and knowledge management, documentation and special and research information centres. Documentation, school librarianship, information consultancy and government libraries were identified as the areas where job prospects are poor.

Table 8. Rating of job market in various information services

Professional areas	Rating of job market (n =84)			
	<i>Good (Excellent and good)</i>	<i>Fair</i>	<i>Very poor</i>	<i>No response</i>
University teaching	64.3%	23.8%	3.6%	8.3%
Academic Libraries	66.7%	25.0%	0%	8.3%
Archivists	48.8%	34.5%	11.9%	4.8%
Web librarians/masters	48.8%	20.2%	19.1%	11.9%
Record managers	44.1%	47.5%	2.4%	6.0%
Knowledge managers	45.2%	27.4%	13.1%	14.3%
Special/research/libraries	41.6%	39.4%	7.1%	11.9%
Documentalists	39.3%	36.9%	14.3%	9.5%
Teacher /school librarians	39.3%	33.3%	16.7%	10.7%
Information consultancy	29.8%	32.1%	26.2%	11.9%
Government Libraries	27.4%	41.7%	21.4%	9.5%

4.3 Assessing the quality of LIS programmes in Kenya

4.3.1. Suitability of LIS professionals to perform service functions

One of the objectives of this study was to assess the adequacy of curriculum and training resources for library and information science professionals in Kenya with respect to the right skills and knowledge for the job market requirements. Respondents in the lecturer, professional and employer categories were asked to state their opinion on the following statement: **“Unless steps are taken to improve the quality of LIS training in Kenya, persons from other professionals will be better placed to perform some information related Work/functions than LIS professionals”**

Table 9. Rating of the suitability of LIS professionals for information work.

	Percentage scores			
	<i>Lecturers (n =11)</i>	<i>Professionals (n =35)</i>	<i>Employers (n =16)</i>	<i>Total (n =62)</i>
Agree (Strongly agree & agree)	72.8%	85.8%	81.3%	82.3%
Disagree (Agree & Strongly disagree)	27.2%	11.3%	18.7%	16.1%
No response	0%	2.9%	0%	1.6%

From the data presented in Table 9 there is a general observation that the current LIS training programmes do not sufficiently address the current job market. For example 82.3% of the 62 respondents among lecturers, professionals and employers are of the opinion that unless steps are taken to improve the quality of LIS training, in Kenya, persons from other professions will be better placed to perform some information related work/functions than LIS professionals.

The respondents were asked to state some of the jobs performed by other persons who are not LIS professionals. The following were given: ICT related activities (e.g. website, databases design), information consultancy and dissemination (e.g. research), records management, management activities (e.g. budgeting, procurement), and statistical/information analysis. This indicates a failure of the LIS training programmes to accommodate, new areas of specialization in information handling, adapt to changing techniques in LIS training and also give professionals the skills relevant to market needs.

4.3.2 Quality of teaching resources LIS training institutions in Kenya.

The study made an assessment of respondent's perception of the quality of teaching resources and conditions at LIS training institutions in Kenya. According to Table 10, only 28.6%, 28.6% and 35.8% of all the respondents think that the number of relevant IT courses, library resources and the length and content of practical attachment respectfully are adequate (good and excellent). Further only 51.2% and 57.2% of all the respondents felt that the courses offered are relevant to the job market, and are offered in appropriate depth respectfully. However it is notable that 59.6% and 66.6% of the respondents think that the quality of students admitted for LIS courses and teaching personnel respectfully is appropriate.

Table 10. Rating of resources in LIS training institutions

Types of resources	Rating of resources (n=84)			
	<i>Good (Excellent and good)</i>	<i>Fair</i>	<i>Very poor</i>	<i>No response</i>
Relevance to the job market	51.2%	41.6%	4.8%	2.4%
Depth of courses	57.2%	34.5%	4.8%	3.5%
Number of relevant IT courses	28.6%	45.2%	23.8%	2.4%
Library resources	28.6%	50.0%	16.6%	4.8%
Quality of students admitted for LIS course	59.6%	32.1%	4.8%	3.5%
Quality of teaching personnel	66.6%	28.6%	2.4%	2.4%
Length and content of practical attachment	35.8%	46.4%	15.4%	2.4%

4.4 Priorities in LIS Curriculum

4.4.1 Importance of subject knowledge in training of LIS professionals

In order to find out the perceptions on the importance of subject knowledge in the training of LIS professionals, respondents were asked to respond to the following question: **Do you think that subject knowledge (i.e. having knowledge in another field e.g. English, Sociology, Economics, Biology, Mathematics etc. in addition to Library and Information Science) is useful in producing high quality LIS graduates for the current and future job market and job performance requirements?**

Table 11 indicates that in a total of 84 respondents, 53.6% of them think that subject knowledge is useful in producing high quality LIS graduates for the current and future job market and job performance requirement. This is compared to 42.8% who think that subject knowledge is not necessary. Subject knowledge is viewed as important in that it equips students with skills and deeper knowledge in subject areas in which they can provide services, equips students with broader knowledge necessary for information work and brings other disciplines into the field of LIS which enrich and provide growth for the profession.

Table 11. Perceptions of the importance of subject knowledge in LIS training

	Percentage Scores				Average scores(n =84)
	Students (n =22)	Lecturers (n =16)	Professionals (n =35)	Employers (n =16)	
Agree	59.1%	50.0%	57.1%	56.3%	53.6%
Disagree	31.8%	43.8%	42.9%	43.7%	42.8%
No response	9.1%	6.2%	0%	0%	3.6%

On the contrary, those who think that subject base is not necessary in producing better quality LIS graduates argue that:

- i. LIS is a technical subject which cannot be tied to any discipline,
- ii. Subject base restricts the subject fields in which the professional can operate,
- iii. LIS professionals are often given courses in information structure of various subjects which makes them able to provide information services in varied subject areas.
- iv. Subject base would be useful mostly to those working in academic libraries.

4.4.2. Suggestions on core and elective units in LIS training by all categories of Respondents

Table 12 shows that there is similarity in the ranking of suggested LIS areas of study as core or elective courses by students, lecturers, professionals and employers. The courses which were overwhelmingly ranked as core in LIS training by all categories of respondents are: communication skills, management information systems,

User/customer services, reference services; information searching and retrieval; database construction; electronic information, knowledge management; cataloguing/classification and indexing; principles of management; subject analysis; research methodology, evaluation of information systems; strategic planning; information/records management and archiving principles. Those which were ranked by all categories of respondents as elective units are: publishing and book trade; information preservation, desktop publishing; non book media; sector specific information services; instructional methods and legal aspects of information.

Table 12. Ranking of core and elective courses in LIS.

Areas of study	Scores on ranking of courses (n =84)	
	<i>Elective Units</i>	<i>Core Units</i>
Cataloguing, classification and indexing	90.4%	6.0%
Information searching and retrieval	89.3%	8.3%
Communication skills	85.7%	8.3%
Collection management	83.3%	15.5%
Management information systems	79.7%	16.7%
User studies and community analysis	72.6%	19.0%
Information systems design	57.2%	32.1%
Sector specific information services	35.7%	54.7%
User/customer services	83.3%	13.1%
Reference services	84.5%	10.7%
Management skills and principles	78.5%	16.7%
Information Preservation	77.4%	17.8%
Research methodology	77.3%	17.9%
Strategic planning	76.2%	16.7%
Electronic information	74.9%	16.7%
Knowledge management	73.8%	14.3%
Database construction and management	72.6%	20.2%
Information/records management	65.4%	27.4%
Evaluation of information systems	58.3%	29.8%
Legal aspects of information	54.7%	40.5%
Subject analysis	50.0%	41.6%
Hardware and software Skills	48.8%	42.8%
Non-book media	46.4%	45.3%
Archiving	38.1%	50.0%
Publishing and book trade	33.3%	54.8%
Instructional methods	33.3%	45.2%
Desktop Publishing	29.7%	59.6%
Entrepreneurship	22.6%	61.9%
Special and industrial libraries	20.2%	59.5%

4.5 Relevant IT Skills LIS Training

The study sought to identify information technology skills that are critical for information professionals in relation to career opportunities and job performance. Table 13 shows the IT skills rated by over 50% of each category of respondents as very useful curriculum for training LIS professionals: hardware and software skills, database construction, website development; digitisation process; electronic information, internet use and evaluation, information storage and retrieval. Other IT courses identified as useful are Electronic publishing, HTML and programming.

Table 13. Useful IT courses in LIS training

IT courses	Rating on usefulness (n=84)		
	<i>Very useful</i>	<i>Fairly useful</i>	<i>Not useful at all</i>
Electronic information	89.3%	4.8%	1.1%
Information storage and retrieval systems	88.0%	6.0%	1.2%
Internet use, & evaluation	88.0%	4.8%	2.4%
Database construction	75.0%	14.2%	4.8%
Websites development	63.0%	25.0%	4.8%
Digitisation process	63.0%	25.0%	3.6%
Networks and intranets	48.8%	39.3%	3.6%
Electronic publishing	42.8%	44.0%	6.0%
HTML	31.0%	46.4%	3.6%
Programming languages	19.0%	51.2%	15.5%

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The general objective of the study was to establish the current training needs of library and information science (LIS) professionals in Kenya. To achieve this study focused on four specific objectives:

- ix. To assess the status of career and job opportunities for library and information science professionals in Kenya
- x. To assess perceptions towards the adequacy of curricula and training resources for library and information science professionals in Kenya with respect to the right skills and knowledge for current job market requirements
- xi. To identify areas of training that are critical for information professionals in relation to current career opportunities and job performance
- xii. To identify information technology skills that are critical for information professionals in relation to current job opportunities and performance requirements.

To achieve the above objectives, data was collected from various categories of stakeholders of library and information science profession using questionnaires. The respondents included employers, lecturers, information professionals and students in LIS field. In total 110 subjects were selected to participate in this study. The two (2) institutions offering degree courses in LIS were included in this study. Ten (10) lecturers were selected from each institution using simple random sampling method. Fifteen (15) students (finalist undergraduate and postgraduate) from each institution were also selected using simple random sampling from each university to participate in the study.

Stratified sampling was used to select to select five (5) information services organizations. Eight (8) subjects (information professionals) were selected using random sampling approach from each of these organizations to participate in the study. Stratified sampling was used to select twenty (20) information services. One (1) subject (employer) was selected using purposive sampling approach from each of these organizations to participate in the study. All the questionnaires were highly responded to by all categories of respondents. Eventually 84 respondents (76.4%) out of the original sample returned the questionnaires. These included 22 students, 11 lecturers, 35 professionals and 16 employers.

The findings from the study are presented in chapter 4. In this chapter, we present a summary of the answers to the research questions, the conclusions reached and some recommendations towards the improvement of training of library and information science professionals in Kenya.

5.2 What is the current status of job opportunities for LIS professionals?

This question was answered through a number of items in the questionnaire administered on different categories of stakeholders of LIS training, namely: students, lecturers, information professionals and employers.

Generally, findings of this study indicate that overwhelming majority of the respondents are of the opinion that there exists a job market for LIS professionals (91.6%). There is no major difference in rating between categories of respondents. Only a few (7.2%) think that a job market does not exist for LIS professionals.

Master's degree received the highest rating as the academic qualification whose prospect in job market is bright. This is followed by Bachelor's and Ph D degree respectfully. Professional areas that were highly rated as possible job markets for LIS professionals include university teaching, academic libraries, web management archiving, record and knowledge management, documentation and special and research information centres.

5.3 Are there perceived deficits in the current curricula and resources for training of LIS professionals in Kenya?

From the data collected there is a general observation that the current LIS training programmes do not sufficiently address the current job market. For example 82.3% of the respondents among lecturers, professionals and employers were of the opinion that unless steps are taken to improve the quality of LIS training in Kenya, persons from other professions will be better placed to perform some information related work/functions than LIS professionals. These include ICT related activities (e.g. website, databases design), information consultancy and dissemination (e.g. research), records management, management activities (e.g. budgeting, procurement), and statistical/information analysis. This indicates a failure of the LIS training to accommodate new areas of specialization in information handling, the failure to adapt to changing techniques in LIS training and hence the failure to give professionals the skills relevant to labour market needs.

On the quality of teaching resources and conditions at LIS training institutions in Kenya less than half of the respondents think that number of relevant IT courses, library resources and the length and content of practical attachment is good (good and excellent). Only slightly more than 50% of the respondents felt that the courses offered are relevant to the job market, and are offered in appropriate depth, majority of the respondents think that the quality of students admitted for LIS courses and teaching personnel is good.

5.4 What should be the priority areas in training of LIS professionals in relation to career opportunities and job performance?

Only 53.6% of the respondents think that subject knowledge (i.e. having knowledge in another field e.g. English, Sociology, Economics, Biology, Mathematics etc. in addition to Library and Information Science) is useful in producing high quality LIS graduates for the current and future job market and job performance requirement. This is compared to 42.8% who think that subject knowledge is necessary. Subject knowledge is viewed as important in that it equips students with skills and deeper knowledge in subject areas in which they can provide services, equips students with broader knowledge necessary for

an information worker and brings other professions into the field of LIS therefore it enriches and provides growth for the profession.

On the contrary, those who think that subject knowledge is not necessary in producing better quality LIS graduates argue that, first; LIS is a technical subject which cannot be tied to any discipline. Secondly, subject knowledge restricts the subject fields in which the professional can operate. Thirdly LIS professionals are often given courses in information structure of various subjects making them able to provide information services in different subject areas. Finally they argue that subject knowledge would be useful mostly to those working in academic libraries.

There is high degree of similarity in the ranking of suggested LIS areas of study as core on elective courses by students, lecturers, professionals and employers. The courses which were overwhelmingly ranked as core courses by all categories of respondents are: communication skills, management information skills, User/customer services, reference services; information searching and retrieval; database construction; electronic information, knowledge management; cataloguing/classification and indexing; principles of management; subject analysis; research methodology, evaluation of information systems; strategic planning; information/records management and archiving principles. Those which were ranked by all categories of respondents as elective units are: publishing and book trade; information preservation, desktop publishing; non book media; sector specific information services; instructional methods and legal aspects of information.

5.5 Which ICT skills are critical for LIS professionals in the current job market and performance in Kenya?

The following IT skills were rated by over 50% of each category of respondents as very useful curriculum for training LIS professionals: hardware and software skills, database construction, website development; digitisation process; electronic information, internet use and evaluation, information storage and retrieval. Other IT courses identified as useful are Electronic publishing, HTML and programming.

5.6 Conclusions and recommendations

There is a general perception that there exists a job market in Kenya for LIS graduates. However, there is a general observation that current LIS training programmes in the country do not sufficiently address current job market requirements due to: inadequate teaching resources at LIS training; lack of adequate ICT content in the courses; inadequate length of courses, courses that are outright irrelevant to the job market, and inadequate industrial attachment for LIS students.

There is need for LIS institutions in Kenya to review and redesign their courses in line with the market requirements. Already LIS courses in Kenya are found to include courses such as communication skills, management information systems, user/customer services, reference services, information searching and retrieval, knowledge management, cataloguing/classification and indexing, principles of management, subject analysis, research methodology, evaluation of information systems, strategic planning,

information/records management, and archiving principles. However there is a suggestion that all of them should be treated as core units.

Worldwide there has been rapid adoption of electronic data processing (EDP) in LIS practice and therefore giving students ICT will give a competitive edge in the labour market and make them competent in the work situations. Advanced ICT skills identified in this study as crucial for LIS practice include hardware and software techniques; website development and administration; digitisation process; electronic information; internet use and evaluation; information storage and retrieval courses such as database design and management; information systems; web authoring and electronic publishing.

The success of any teaching program depends on the quality of the teaching staff and therefore there is need for careful selection of teaching staff to ensure that only those with the right academic and professional qualifications, research and publication record, and experience are allowed to teach. The faculty should be sufficient to provide adequate coverage of the many specialist subjects on offer. LIS is a highly practical subject and therefore students need to be exposed to adequate practicum. Industrial attachment/internships should therefore be carefully chosen to expose students to the right information work practices and information technology.

The field of library and information science is highly dynamic and therefore there is need for current information resources to support teaching and learning. This study revealed a perception that library resources in Kenyan LIS schools are poor. This calls for efforts to ensure the availability of essential reference sources, current monographs and journal titles to cover all courses being taught. IT is a highly practical area which requires hands-on approach. It is therefore necessary to ensure that adequate computing infrastructure including computer hardware and software, efficient internet connectivity, intranets, and multimedia storage facilities are available. This will ensure effective learning in the IT courses through hands-on experience. Resources such as LCD projectors and laptops should be provided to facilitate more interactive teaching methods. The case study method is particularly helpful in teaching courses such as principles of management, database creation, as well as information processing and retrieval

Kenya does not have a central organization to co-ordinate the content of university courses in the country and therefore each institution develops its own curricula. The role of the Commission of Higher Education (CHE) of Kenya is limited to accrediting privately sponsored universities while government sponsored universities are left to decide the courses to offer and the level of learning support provided to students. There is need for a system of accrediting LIS courses at the national level for purposes of quality assurance. In this area the LIS professional bodies can play a significant role.

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APPENDIX I: QUESTIONNAIRE FOR LIS PROFESSIONALS

GENERAL INSTRUCTION

Please tick (✓) in the racket in front of appropriate response and where explanation is required use the space provided.

BACKGROUND INFORMATION

1. Sex: 1. Male []
 2. Female []

2. What type of organization do you work for?

University library []
Research organization []
Business/commercial agency []
Government agency/department []
Development organization (multilateral or bilateral)
LIS teaching department []
School library []
Public library []
Archive []
Documentation/Information centre []
Other (please state) []

3. Which category best describes your main area of work? (Please tick appropriately)

Librarian []
Teacher Librarian/School Media Specialist []
Lecturer []
Information specialist []
Information consultant/broker []
Knowledge manager []
Web Librarian []
Youth and Children Librarian []
Archivist []
Documentalists []
Other (please state) _____ []

4. Please state your highest qualification in **Library and Information science**

1. Bachelor's degree []
2. Master's degree []
3. Ph. D []

JOB MARKET FOR LIBRARY AND INFORMATION SCIENCE PROFESSIONALS

- 5(a). Could you please state your opinion on the following statement? **"There exists a job market for library and information science (LIS) professionals in Kenya"**

1. Strongly agree []
2. Agree []
3. Disagree []
4. Strongly disagree []

- b). Please comment on your response in item 5(a)

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6. Please assess the status of labour market for the following Library and Information Science professionals and professional areas. Use the following codes and circle appropriately in the table

- 1 = Excellent
- 2 = Good
- 3 = Fair
- 4 = very poor

LIS PROFESSIONAL CATEGORIES & AREAS	RATING			
	Excellent	Good	Fair	Very poor
Diploma & Certificate holders	1	2	3	4
Bachelor's degree holders	1	2	3	4
Master's degree holders	1	2	3	4
Doctorate degree holders	1	2	3	4
University teaching /research work	1	2	3	4
Academic libraries (Universities and colleges)	1	2	3	4
Teacher librarians/ School librarians/media specialists	1	2	3	4
Knowledge managers	1	2	3	4
Government libraries	1	2	3	4
Special / industrial libraries	1	2	3	4
Web Librarians/ masters	1	2	3	4
Independent Information consultant/broker	1	2	3	4
Documentalists	1	2	3	4
Record managers	1	2	3	4
Archivists	1	2	3	4
Other, specify:	1	2	3	4

7. Given an opportunity would you pursue higher qualifications in Library and Information Science?

- 1. Yes
- 2. No

QUALITY OF LIBRARY AND INFORMATION SCIENCE TRAINING IN KENYA

8. (a) Could you please state your opinion of the following statement? **“Unless immediate steps are taken to improve the quality of LIS training, persons from other professions will be better placed to perform some information related work/functions than LIS professionals”**

- 1. Strongly agree []
- 2. Agree []
- 3. Disagree []
- 4. Strongly disagree []

b) Please state some functions/activities in information work that ought to be handled by LIS professionals but are performed by other professionals.

i.....

- ii.
- iii.
- iv.

9. Please rate the following aspects of teaching resources and conditions at Library and Information Science training institutions in Kenya. Use the following codes and circle appropriately in the table.

- 1 = Excellent
- 2 = Good
- 3 = Fair
- 4 = very poor

RESOURCES IN LIS TRAINING IN KENYA	RATING			
	Excellent	Good	Fair	Very poor
Variety of courses relevant to the job market	1	2	3	4
Depth of courses or themes covered	1	2	3	4
Number of relevant IT courses	1	2	3	4
Relevant library resources available	1	2	3	4
Quality of students admitted for LIS course	1	2	3	4
Quality of teaching personnel	1	2	3	4
Length and content of Practical attachment	1	2	3	4

10. Please state some urgent measures that need to be taken in LIS training to improve the suitability of information professionals to the labour market in Kenya.

- i.
- ii.
- iii.
- iv.

RELEVANT CONTENT OF LIBRARY AND INFORMATION SCIENCE CURRICULUM

11(a). Do you think that subject knowledge (i.e. having knowledge in another field e.g. English, Sociology, Economics, Biology, Mathematics etc. in addition to Library and Information Science) is useful in producing high quality LIS graduates for the current and future job market and job performance requirements?

- 1. Yes []
- 2. No []

(b). If your response in 11(a) is 'yes' please state why you think subject knowledge is useful for Library and Information Science career and job requirements.

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12. The following are some courses in Library and Information Science. Please for each state whether it should be a core course, an elective course or if it is an irrelevant course in a Library and Information Science curriculum aimed at producing LIS professionals today relevant to the job market. Kindly use the following codes and circle appropriately.

- 1 = Core unit
 2 = Elective unit
 3 = Irrelevant
 4 = Not sure

	Core Unit	Elective unit	Irrelevant	Not sure
Communication/ Information literacy skills	1	2	3	4
User studies and community analysis	1	2	3	4
Entrepreneurship education	1	2	3	4
Collection Management	1	2	3	4
Management information systems	1	2	3	4
Information systems design	1	2	3	4
Sector specific/Specialized information services and systems (e.g. School libraries, medical, university, public libraries etc)	1	2	3	4
User /customer services	1	2	3	4
Reference services	1	2	3	4
Instructional methods	1	2	3	4
Techniques in information searching and retrieval	1	2	3	4
Database construction and management	1	2	3	4
Special / industrial library services	1	2	3	4
Non Book Media (NBM)	1	2	3	4
Electronic information	1	2	3	4
Knowledge management	1	2	3	4
Cataloguing, classification and indexing	1	2	3	4
Hardware and software skills	1	2	3	4
Management skills and principles	1	2	3	4
Subject analysis	1	2	3	4
Desktop publishing	1	2	3	4
Research methodology	1	2	3	4
Legal aspects of information	1	2	3	4
Evaluation of information systems	1	2	3	4
Preservation and conservation of information	1	2	3	4
Publishing and book trade	1	2	3	4
Strategic planning and marketing of information services	1	2	3	4
Information/Records management	1	2	3	4
Archiving	1	2	3	4
Others (please state)	1	2	3	4

RELEVANT INFORMATION TECHNOLOGY SKILLS IN LIS TRAINING

14. Please rate the usefulness of the following IT skills in syllabus for training LIS professionals. Use the following codes to circle appropriately on the table.

- 1 = Very useful
- 2 = Fairly useful
- 3 = Not useful at all
- 4 = Not Sure

INFORMATION TECHNOLOGY SKILLS	RATING			
	Very useful	Fairly useful	Not useful at all	Not Sure
Hardware and software support skills	1	2	3	4
Database construction and maintenance/use	1	2	3	4
Websites development and maintenance/use	1	2	3	4
Use of digitisation equipment and conversion	1	2	3	4
Electronic information retrieval	1	2	3	4
Internet use, searching and evaluation	1	2	3	4
Setting up networks and intranets	1	2	3	4
Production of electronic texts and desktop publishing	1	2	3	4
Information storage and retrieval systems	1	2	3	4
HTML	1	2	3	4
Programming languages	1	2	3	4
Others (please state)	1	2	3	4

15. Please give any other comment you may have on training of Library and Information Science professionals in Kenya.

APPENDIX II: QUESTIONNAIRE FOR EMPLOYERS OF LIS PROFESSIONALS

GENERAL INSTRUCTION

Please tick (✓) in the racket in front of appropriate response and where explanation is required use the space provided.

BACKGROUND INFORMATION

1. Sex: 1. Male [] 2. Female []

2. What is the type of your organization?

- 1. University []
- 2. Research organization []
- 3. Business/commercial agency []
- 4. Government agency/department []
- 5. Development organization (multilateral or bilateral) []

- 6. LIS teaching department[]
- 7. School []
- 8. Public []
- 9. Archive []
- 10. Documentation/information centre []
- 11. Other (please specify) _____[]

JOB MARKET FOR LIBRARY AND INFORMATION SCIENCE PROFESSIONALS

3(a). Could you please state your opinion on the following statement? **“There exists a job market for library and information science professionals in Kenya”**

- 1. Strongly agree []
- 2. Agree []
- 3. Disagree []
- 4. Strongly disagree []

(b). Please comment on your response in item 3(a).

.....

.....

.....

.....

4. Please assess the status of the job market for the following Library and Information Science professionals and professional areas. Use the following codes and circle appropriately in the table.

- 1= Excellent
- 2 = Good
- 3 = Fair
- 4 = very poor

LIS PROFESSIONAL CATEGORIES & AREAS	RATING			
	Excellent	Good	Fair	Very poor
Diploma & Certificate holders	1	2	3	4
Bachelor’s degree holders	1	2	3	4
Master’s degree holders	1	2	3	4
Doctorate degree holders	1	2	3	4
University teaching /research work	1	2	3	4
Academic libraries (University and colleges)	1	2	3	4
Teacher librarians/ School librarians/media specialists	1	2	3	4
Knowledge managers	1	2	3	4
Government libraries	1	2	3	4
Special / industrial libraries	1	2	3	4
Web Librarians/ masters	1	2	3	4
Independent Information consultant/broker	1	2	3	4
Documentalists	1	2	3	4
Record managers	1	2	3	4
Archivists	1	2	3	4
Others (please specify)	1	2	3	4

QUALITY OF LIBRARY AND INFORMATION SCIENCE TRAINING IN KENYA

6. (a) Could you please state your opinion of the following statement? **“Unless immediate steps are taken to improve the quality of LIS training, persons from other professions will be better placed to perform some information related work/functions than LIS professionals”**

1. Strongly agree []
2. Agree []
3. Disagree []
4. Strongly disagree []

b) Please state some functions/activities in information work that ought to be handled by LIS professionals but are performed by other professionals.

- i.
- ii.
- iii.

7(a) Could you please state your opinion of the following statement? **“Most LIS courses offered in Kenyan institutions do not adequately prepare students for the current and emerging job market requirements”**

4. Strongly agree []
3. Agree []
2. Disagree []
1. Strongly disagree []

b). Comment on your response in item 7 (a)

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-
-
-

8. Please rate the following aspects of teaching resources and conditions at Library and Information Science training institutions in Kenya. Use the following **codes and circle** appropriately in the table.

- 1 = Excellent
- 2 = Good
- 3 = Fair
- 4 = very poor

RESOURCES IN LIS TRAINING IN	RATING			
	Excellent	Good	Fair	Very poor
Variety of courses relevant to the job market	1	2	3	4
Depth of courses or themes covered	1	2	3	4
Number of relevant IT courses	1	2	3	4
Relevant library resources available	1	2	3	4
Quality of students admitted for LIS course	1	2	3	4
Quality of teaching personnel	1	2	3	4
Length and content of Practical attachment	1	2	3	4

9. Please state some urgent measures that need to be taken in LIS training to improve the suitability of information professionals to the labour market in Kenya.

- i.
- ii.
- iii.
- iv.

RELEVANT CONTENT OF LIBRARY AND INFORMATION SCIENCE CURRICULUM

10(a) Do you think that subject knowledge (i.e. having knowledge in another field e.g. English, Sociology, Economics, Biology, Mathematics etc. in addition to Library and Information Science) is **useful** in producing high quality LIS graduates for the current and future job market and job performance requirements?

- 1. Yes []
- 2. No []

(b). If your response in 10(a) is '**yes**' please state why you think Subject knowledge is **useful** for Library and Information Science career and job requirements.

.....

11. The following are some courses in Library and Information Science. Please for each state whether it should be a core course, an elective course or if it is an irrelevant course in a Library and Information Science curriculum aimed at producing LIS professionals today relevant to the job market. Kindly use the following codes and circle appropriately.

- 1 = Core unit
- 2 = Elective unit
- 3 = Irrelevant
- 4 = Not sure

	Core Unit	Elective unit	Irrelevant	Not sure
Communication/ Information literacy skills	1	2	3	4
User studies and community analysis	1	2	3	4
Entrepreneurship education	1	2	3	4
Collection Management	1	2	3	4
Management information systems	1	2	3	4
Information systems design	1	2	3	4
Sector specific/Specialized information services and systems (e.g. School libraries, medical, university, public libraries etc	1	2	3	4
User /customer services	1	2	3	4
Reference services	1	2	3	4
Instructional methods	1	2	3	4

Techniques in information searching and retrieval	1	2	3	4
Database construction and management	1	2	3	4
Special / industrial library services	1	2	3	4
Non-Book Media (NBM)	1	2	3	4
Electronic information	1	2	3	4
Knowledge management	1	2	3	4
Cataloguing, classification and indexing	1	2	3	4
Hardware and software skills	1	2	3	4
Management skills and principles	1	2	3	4
Subject analysis	1	2	3	4
Desktop publishing	1	2	3	4
Research methodology	1	2	3	4
Legal aspects of information	1	2	3	4
Evaluation of information systems	1	2	3	4
Preservation and conservation of information	1	2	3	4
Publishing and book trade	1	2	3	4
Strategic planning and marketing of information services	1	2	3	4
Information/Records management	1	2	3	4
Archiving	1	2	3	4
Others (please state)	1	2	3	4

RELEVANT IT SKILLS IN LIBRARY AND INFORMATION SCIENCE TRAINING

12. Please rate the usefulness of the following IT skills in curriculum for training LIS professionals. Use the following codes to circle appropriately on the table.

- 1 = Very useful
- 2 = Fairly useful
- 3 = Not useful at all
- 4 = .Not Sure

INFORMATION TECHNOLOGY SKILLS	RATING			
	Very useful	Fairly useful	Not useful at all	Not Sure
Hardware and software support skills	1	2	3	4
Database construction and maintenance/use	1	2	3	4
Websites development and maintenance/use	1	2	3	4

Use of digitisation equipment and conversion	1	2	3	4
Electronic information retrieval	1	2	3	4
Internet use, searching and evaluation	1	2	3	4
Setting up networks and intranets	1	2	3	4
Production of electronic texts and desktop publishing	1	2	3	4
Information storage and retrieval systems	1	2	3	4
HTML	1	2	3	4
Programming languages	1	2	3	4
Others (please state)	1	2	3	4

13. Please give any other comment you may have on training of Library and Information Science professionals in Kenya.

APPENDIX III: QUESTIONNAIRE FOR LECTURERS OF LIS

GENERAL INSTRUCTION

Please tick (✓) in the racket in front of appropriate response and where explanation is required use the space provided.

BACKGROUND INFORMATION

1. Sex: 1. Male [] 2. Female []
2. Please state your highest qualification in Library and Information science
 1. Master's degree []
 2. Ph. D []

JOB MARKET FOR LIBRARY AND INFORMATION SCIENCE PROFESSIONALS

3(a). Could you please state your opinion on the following statement? **“There exists a job market for library and information science professionals in Kenya”**

1. Strongly agree []
2. Agree []
3. Disagree []
4. Strongly disagree []

b). Please comment on your response in item 3(a).

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4. Please assess the status of labour market for the following Library and Information Science professionals and professional areas. Use the following codes and circle appropriately in the table.

- 1 = Excellent
- 2 = Good
- 3 = Fair
- 4 = very poor

LIS PROFESSIONAL CATEGORIES & AREAS	RATING			
	Excellent	Good	Fair	Very poor
Diploma & Certificate holders	1	2	3	4
Bachelor's degree holders	1	2	3	4
Master's degree holders	1	2	3	4
Doctorate degree holders	1	2	3	4
University teaching / research work	1	2	3	4
Academic libraries (University and colleges)	1	2	3	4
Teacher librarians/ School librarians/media specialists	1	2	3	4
Knowledge managers	1	2	3	4
Government libraries	1	2	3	4
Special / industrial library services	1	2	3	4
Web Librarians/ masters	1	2	3	4
Independent Information consultants/brokers	1	2	3	4

Documentalists	1	2	3	4
Records managers	1	2	3	4
Archivists	1	2	3	4
Others (place state)	1	2	3	4

QUALITY OF LIBRARY AND INFORMATION SCIENCE TRAINING IN KENYA

5. (a) Could you please state your opinion on the following statement? **“Unless immediate steps are taken to improve the quality of LIS training, persons from other professions will be better placed to perform some information related work/functions than LIS professionals”**

- 1. Strongly agree []
- 2. Agree []
- 3. Disagree []
- 4. Strongly disagree []

b) Please state some functions/activities in information work that ought to be handled by LIS professionals but are performed by other professionals.

- i.....
- ii.....
- iii.....
- iv.....

6(a) Could you please state your opinion of the following statement? **“Most LIS courses offered in Kenyan institutions do not adequately prepare students for the current and emerging job market requirements”**

- 1. Strongly agree []
- 2. Agree []
- 3. Disagree []
- 4. Strongly disagree []

b). Comment on your response in item 6(a).

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7. Please rate the following aspects of teaching resources and conditions at Library and Information Science training institutions in Kenya. Use the following codes and circle appropriately in the table.

- 1 = Excellent
- 2 = Good
- 3 = Fair
- 4 = very poor

RESOURCES IN LIS TRAINING IN KENYA	RATING			
	Excellent	Good	Fair	Very poor
Variety of courses relevant to the job market	1	2	3	4
Depth of courses or themes covered	1	2	3	4
Number of relevant IT courses	1	2	3	4
Relevant library resources available	1	2	3	4
Quality of students admitted for LIS course	1	2	3	4

Quality of teaching personnel	1	2	3	4
Length and content of Practical attachment	1	2	3	4

8. Please state some urgent measures that need to be taken in LIS training to improve the suitability of information professionals to the labour market in Kenya.

- i.
- ii.
- iii.
- iv.

RELEVANT CONTENT OF LIBRARY AND INFORMATION SCIENCE CURRICULUM

9. Do you think that subject knowledge (i.e. having knowledge in another field e.g. Sociology, Economics, Biology, English, Geography, Mathematics etc. in addition to Library and Information Science) is **useful** in producing high quality LIS graduates for the current and future job market and job performance requirements?

- 1. Yes []
- 2. No []

(b). If your response in 10(a) is 'yes' please state why you think subject knowledge is **useful** for Library and Information Science career and job requirements.

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10. The following are some courses in Library and Information Science. Please for each state whether it should be a core course, an elective course or if it is an irrelevant course in a Library and Information Science curriculum aimed at producing LIS professionals relevant to the job market. Kindly use the following codes and circle appropriately.

- 1 = Core unit
- 2 = Elective unit
- 3 = Irrelevant
- 4 = Not sure

	Core Unit	Elective unit	Irrelevant	Not sure
Communication/ Information literacy skills	1	2	3	4
User studies and community analysis	1	2	3	4
Entrepreneurship education	1	2	3	4
Collection Management	1	2	3	4
Management information Systems	1	2	3	4
Information systems	1	2	3	4

design				
Sector specific/Specialized information services and systems (e.g. School libraries, medical, university, public libraries etc	1	2	3	4
User /customer services	1	2	3	4
Reference services	1	2	3	4
Instructional methods	1	2	3	4
Techniques in information searching and retrieval	1	2	3	4
Database construction and management	1	2	3	4
Special / industrial library services	1	2	3	4
Non Book Media (NBM)	1	2	3	4
Electronic information	1	2	3	4
Knowledge management	1	2	3	4
Cataloguing, classification and indexing	1	2	3	4
Hardware and software skills	1	2	3	4
Management skills and principles	1	2	3	4
Subject analysis	1	2	3	4
Desktop publishing	1	2	3	4
Research methodology	1	2	3	4
Legal aspects of information	1	2	3	4
Evaluation of information systems	1	2	3	4
Preservation and conservation of information	1	2	3	4
Publishing and book trade	1	2	3	4
Strategic planning and marketing of information services	1	2	3	4
Information/Records management	1	2	3	4
Archiving	1	2	3	4
Others (please state)	1	2	3	4

RELEVANT IT SKILLS IN LIBRARY AND INFORMATION SCIENCE TRAINING

11. Please rate the usefulness of the following IT skills in curriculum for training LIS professionals. Use the following codes and circle appropriately on the table.

- 1 = Very useful
- 2 = Fairly useful

3 = Not useful at all

4 = Not Sure

INFORMATION TECHNOLOGY SKILLS	RATING			
	Very useful	Fairly useful	Not useful at all	Not Sure
Hardware and software support skills	1	2	3	4
Database construction and maintenance/use	1	2	3	4
Websites development and maintenance/use	1	2	3	4
Use of digitisation equipment and conversion	1	2	3	4
Electronic information retrieval	1	2	3	4
Internet use, searching and evaluation	1	2	3	4
Setting up networks and intranets	1	2	3	4
Production of electronic texts and desktop publishing	1	2	3	4
Information storage and retrieval systems	1	2	3	4
HTML	1	2	3	4
Programming languages	1	2	3	4
Others (please state)	1	2	3	4

13. Please give any other comment you may have on training of Library and Information Science professionals in Kenya.

APPENDIX IV: QUESTIONNAIRE FOR STUDENTS OF LIS

GENERAL INSTRUCTION

Please tick (✓) in the racket in front of appropriate response and where explanation is required use the space provided.

BACKGROUND INFORMATION

1. Sex : 1. Male[] 2. Female []
 2. Age: 1. Under 20 yrs [] 2. Between 20 – 25 yrs [] 3. Between 26 – 30 yrs []
 4. Above 31[]
 3. Programme of study: 1. Undergraduate [] 2. Post graduate degree []
 3. Ph. D []

JOB MARKET FOR LIBRARY AND INFORMATION SCIENCE PROFESSIONALS

4. Could you please state your opinion on the following statement? **“There exists a job market for library and information science professionals in Kenya”**

1. Strongly agree []
 2. Agree []
 3. Disagree []
 4. Strongly disagree []

5. Please assess the status of labour market for the following Library and Information Science professionals and professional areas. Use the following codes and circle appropriately in the table

- 1 = Excellent
 2 = Good
 3 = Fair
 4 = very poor

LIS PROFESSIONAL CATEGORIES & AREAS	RATING			
	Excellent	Good	Fair	Very poor
Diploma & Certificate holders	1	2	3	4
Bachelor's degree holders	1	2	3	4
Master's degree holders	1	2	3	4
Doctorate degree holders	1	2	3	4
University teaching and research	1	2	3	4
Academic libraries (university and colleges)	1	2	3	4
Teacher librarians/ School librarians/media specialists	1	2	3	4
Knowledge managers	1	2	3	4
Government libraries	1	2	3	4
Special /Industrial libraries	1	2	3	4
Web Librarians/ masters	1	2	3	4
Independent Information	1	2	3	4

consultants/brokers				
Documentalists	1	2	3	4
Record managers	1	2	3	4
Archivists	1	2	3	4
Others (place state)	1	2	3	4

6. Given the opportunity would you pursue the next level (further) qualification in Library and Information Science?

1. Yes
2. No

QUALITY OF LIBRARY AND INFORMATION SCIENCE TRAINING IN KENYA

7(a). Could you please state your opinion of the following statement? "Unless immediate steps are taken to improve the quality of LIS training, persons from other professions will be better placed to perform some information related work/functions than LIS professionals"

1. Strongly agree []
2. Agree []
3. Disagree []
4. Strongly disagree []

(b) Please state some functions/activities in information work that ought to be handled by LIS professionals but are performed by other professionals.

- i.....
- ii.....
- iii.....

8. Please rate of the following aspects of teaching resources and conditions for Library and Information Science programme in your institution. Use the following codes and circle appropriately in the table.

- 1 = Excellent
- 2 = Good
- 3 = Fair
- 4 = very poor

RESOURCES IN LIS TRAINING IN KENYA	RATING			
	Excellent	Good	Fair	Very poor
Variety of courses relevant to the job market	1	2	3	4
Depth of courses or themes covered	1	2	3	4
Number of relevant IT courses	1	2	3	4
Relevant library resources available	1	2	3	4
Quality of students admitted for LIS course	1	2	3	4
Quality of teaching personnel	1	2	3	4
Length and content of practical attachment	1	2	3	4

9. Please state some urgent measures that need to be taken in LIS training to improve the suitability of locally trained information professionals to the labour market in Kenya.

- i.....
- ii.....

iii.....
 iv.....

RELEVANT CONTENT OF LIBRARY AND INFORMATION SCIENCE CURRICULUM

10(a). Do you think that subject knowledge (i.e. having knowledge in another field e.g. English, Biology, Sociology, economics, Geography, Mathematics, etc. in addition to Library and Information Science) is **useful** in producing high quality LIS graduates for the current and future job market and job performance requirements?

- 1. Yes
- 2. No

(b). If your response in 10(a) is **'yes'** please state why you think subject knowledge is **useful** for Library and Information Science career and job requirements.

.....

11. The following are some courses in Library and Information Science. Please for each state whether it should be a core course, an elective course or if it is an irrelevant course in a Library and Information Science curriculum aimed at so as to producing LIS professionals relevant to the job market. Kindly use the following codes and circle appropriately.

- 1 = Core unit
- 2 = Elective unit
- 3 = Irrelevant
- 4 = Not sure

	Core Unit	Elective unit	Irrelevant	Not sure
Communication/ Information literacy skills	1	2	3	4
User studies and community analysis	1	2	3	4
Entrepreneurship education	1	2	3	4
Collection Management	1	2	3	4
Management information Systems	1	2	3	4
Information systems design	1	2	3	4
Sector specific/Specialized information services and systems (e.g. School libraries, medical, university, public libraries etc	1	2	3	4
User /customer services	1	2	3	4
Reference services	1	2	3	4
Instructional methods	1	2	3	4

Techniques in information searching and retrieval	1	2	3	4
Database construction and management	1	2	3	4
Special and industrial librarianship	1	2	3	4
Non-Book Media (NBM)	1	2	3	4
Electronic information	1	2	3	4
Knowledge management	1	2	3	4
Cataloguing, classification and indexing	1	2	3	4
Hardware and software skills	1	2	3	4
Management skills and principles	1	2	3	4
Subject analysis	1	2	3	4
Desktop publishing	1	2	3	4
Research methodology	1	2	3	4
Legal aspects of information	1	2	3	4
Evaluation of information systems	1	2	3	4
Preservation and conservation of information	1	2	3	4
Publishing and book trade	1	2	3	4
Strategic planning and marketing of information services	1	2	3	4
Information/Records management	1	2	3	4
Archiving	1	2	3	4
Others (please state)	1	2	3	4

RELEVANT INFORMATION TECHNOLOGY SKILLS IN LIS TRAINING

12. Please rate the usefulness of the following IT skills in syllabus for training of LIS professionals. Use the following codes to circle appropriately on the table.

- 1 = Very useful
- 2 = Fairly useful
- 3 = Not useful at all
- 4 = Not Sure

INFORMATION TECHNOLOGY SKILLS	RATING			
	Very useful	Fairly useful	Not useful at all	Not Sure
Hardware and software support skills	1	2	3	4
Database construction and maintenance/use	1	2	3	4
Website development and maintenance/use	1	2	3	4
Use of digitisation equipment and	1	2	3	4

conversion				
Electronic information retrieval	1	2	3	4
Internet use, searching and evaluation	1	2	3	4
Setting up networks and intranets	1	2	3	4
Production of electronic texts and desktop publishing	1	2	3	4
Information storage and retrieval systems	1	2	3	4
HTML	1	2	3	4
Programming languages	1	2	3	4
Others (please state)	1	2	3	4

13. Please give any other comment you may have on training of Library and Information Science professionals in Kenya.

Thank you for your assistance