Polytechnic Library Personnel Competency Framework In Ict Environment: A Study Of Some Selected Polytechnic Libraries In The North West.

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Abstract- Information and communication technology (ICT) has changed the world of library such that activities being carried out manually before are now being automated. The works of library staff are now being characterized by information and communication technologies. Academic libraries were observed to be more equipped with information infrastructures more than any other type of libraries, but no library no matter how well equipped that doesn't require the service of a workforce that is highly competent in the use of ICT tools, as such information infrastructure will remain unused or under-utilized. It is in connection to this, that this study examined the background and underlined the need for an ICT competency framework that explains the duties and responsibilities of the library professionals engaged. The study also highlighted several aspects of ICT competency implementation and the impacts of ICT on the development of library personnel competencies in general. A descriptive survey design of quantitative research method was used, with a sample size of one hundred and thirty-two (132) drawn from population of one hundred and fifty-two (152). Questionnaire served as instrument for data collection, with two hundred and fifty-five participants (which constitute 85.49% return rate) fully completed and returned the instrument. Result of findings demonstrated a high level of ICT competency on the part of library professionals staff in selected polytechnics libraries (Federal Polytechnic, Kaura Namoda, Nuhu Bamalli Polytechnic, Zaria and Federal Polytechnic, Kaduna), most especially on skills that were considered basic and intermediate ICT skill. Identified challenges militating against effective utilization of ICT tools in the library for dynamic information service delivery include; lack of adequate information infrastructure, absent of provision for staff training and development, inappropriate library and information science curriculum and epileptic power supply. Sequential to the above identified challenges the study recommends that library management should make available adequate information infrastructure, make provision for staff development and training, make appropriate ICT driven LIS curriculum and steady power supply.

Index Terms- Polytechnic, Competency, ICT, Framework

I. Introduction

Information management has grown increasingly crucial in everyday life, especially in libraries. This is due to advancements in electronic resources and library applications of information and communication technology (ICT). Library staff plays a critical part in transitioning the library from its traditional functions to a more sophisticated role in digital information dissemination. As a result, identifying the competency of library and information science (LIS) workers in an ICT setting becomes even more difficult. All aspects of library management are affected in some way or another by ICT applications. Computers, printers, modems, RFID, V-SAT, and other communication equipment have completely revolutionized the functions and services in libraries. Kaur, Rajinder, Gaur, and Rupesh (2017) stated that to cope with this situation, LIS professionals should be ICT competent for achieving effective utilization of resources, user satisfaction, and staff motivation.

Information and Communication Technology (ICT) is one of the greatest inventions of mankind which played unprecedented roles in changing the landscape of human and organization activities around the globe from which libraries are not exempted. In corroboration to that Dhanavandan, Esmail, Mohammed, and Nagarajan (2012) postulated Libraries are currently extensively engaged in digitization of practically all library resources to provide rapid, interactive, and dynamic information services to users, as ICT has significantly impacted every part of human pursuits, including libraries. As a result of advancements in technology, knowledge has been spread quickly over the world. In the present era of technological developments, it has been observed that market demands for library professionals are changing in terms of qualification, experience, professional and technical skills. Several researchers have raised concerns on the technical competence of librarians in coping with multifaceted challenges of the introduction of ICT in libraries. According to Akhilesh and Prerana (2016), LIS graduates are not only expected to have core library skills but also the ability to implement ICT knowledge efficiently and effectively.

ICT is generic terms that refers to the technologies that are used to collect, store, edit and communicate information in various

format (Raji, 2018). According to Janakiraman and Subramaniah (2015) the world now experiences a digital scenario in which ICT has changed the possibilities of the library job promotions and has brought changes to expected library performances. Since libraries are at the Centre of information business, it will not remain unchanged when these technologies are changing. Hence, possession of ICT skills has become an important recruitment variable for libraries while the introduction of ICTs in education had also brought about computerization of traditional materials such as books, journals newspaper and other information resources in the library (Madu, Aboyade & Aboyade, 2016). This has also led to the existence of virtual library. Educational researchers, through the use of ICT can access current literature materials with ease. ICTs also encourage collaboration among researchers irrespective of their locations. Instead, ICT skills are about the ability to use their knowledge about ICT to find, develop and present information; whether it is text, image or number, or all of this integrated task" (Quadri, 2017). It is thus clear that LIS professionals must learn and adjust to a rapidly changing environment and acquire competencies and skills to become a knowledgeable asset to the library. Library professionals then teach these skills to users and other supporting staffs to enable them search, navigate and find the right knowledge from a world of information. Libraries have been transformed into information centres, formal tools and techniques have been replaced by the modern technologies. ICT has become an integral part of the modern libraries (Emiri, 2015). Chisita and Shoko (2015) defined ICT in a library context to mean the application of various technologies such as computers, retro-graphics, audio-visuals, and other electronic devices for storage, reproduction, and dissemination of information in a library environment. In a similar vein, Vijayakumar and Vijayan (2018) defined ICT as the application of computers and technologies for the acquisition, organization, storage, retrieval, and dissemination of information. Malanga (2015) explained the definition further to mean a revolution that provides the platform and technical means of handling information and communication. With all these definitions, ICT can rightly be said to be a catalyst for generating, processing, storing, and disseminating information. Various studies have mentioned the necessity of ICT skills for librarians. Hallam and Ellard (2015) studied show that "digital literacy represents a fundamental Foundation skill needed by library staff". Libraries in Nigeria, like libraries in other areas of the world, are confronting issues as a result of the media through which information is generated, communicated, disseminated, and archived, as electronic formats become more prevalent. One of the numerous obstacles is storing and providing information in many formats (pdf, jpg, Html, etc.) that may be accessed by various people in various ways from different parts of the world through different media (phone, email, social networking sites, etc.) simultaneously, managing online learning communities and working in virtual environments, etc. In a contextually networked global village, it could be perceived that polytechnic libraries, without ICT competent professionals, may run the risk of being out-dated.

Competency on the other hand is the ability to do something successfully and efficiently. It is the skills, quality, the ability needed to perform a task. It also tends to describe the level of proficiency of an individual in executing a particular task or job. Competency is the ability, skills, attributes, proficiency of an individual to perform or do something efficiently. Oyewunmi, Akanbi and Laaro (2018) stressed that competency is a set of predefined skills that provide a structured yardstick against which proficiency of an individual performance in carrying out a given task is measured and evaluated. Ojiegbe (2020) view competency as a way of demonstrating the knowledge, skills, experience, and attribute of an individual to carry out a defined function successfully. Competency is a set of predefined skills that provide a structured guide against which proficiency of an individual performance in executing a task is being measured and evaluated. Competency could be seen as a combination of practical and theoretical knowledge, skills, behavior, and value needed to improve on a performance. It could also be seen as a state or quality of being adequately equipped and qualified to perform a given task. Library professionals need technical know-how and need to acquire ICT competencies that may not fall within the traditional library for several practical reasons. The future roadmap for the ICT competency framework for LIS professionals is varied and multi-faceted. All the library services should be made available to users' on-demand, at places as per convenient location, and be enabled in any part of the world. The availability of workflow processes, use of ICT, networked computers, peripherals viz., printers, scanners, modems, etc., are much required under these circumstances. The empowerment of users is achieved by employing employees who are technically and intellectually competent and qualified. These employees are the users' first point of contact; thus, they must demonstrate adequate skills for the job. As a result, putting a strong emphasis on developing ICT skills is crucial in dealing with the situation. ICT revolutionized many traditional library practices which in turn posed a new challenge, opportunities, and competition for LIS professionals (Narasappa & Kumar, 2016).

Problem Statement

It is past time to recognize the importance of training library workers in the education sector and to invest appropriately in developing professionals working in the learning delivery system, namely libraries. Developing a competency framework for library personnel is the need of the hour in any polytechnic library that wants to be dynamic and growth-oriented or to succeed in a fast-changing environment. Libraries can become dynamic and grow only through the efforts and competencies of their human resources. Personnel policies can help to maintain people's morale and motivation strong, but they are insufficient to make the company dynamic and move it in new directions. This research aims to investigate the entire range of people situations in polytechnic libraries by eliciting staff perspectives on ICT applications that the libraries of the federal polytechnic, Kaura Namoda, Nuhu Bamalli polytechnic, Zaria and Kaduna polytechnic, Kaduna are selected as the main focal point of study. This study would help in accomplishing common goals of the polytechnic libraries and would focus on the following aspects:

- ICT-based competencies of library personnel (working in the 03 selected polytechnic libraries in the North-Western part of Nigeria).
- The ICT course content of the LIS curriculum (of some selected LIS departments of the institutions.

The Aim and Objectives Of The Research Are:

The main aim of the research is to explore the ICT competencies of LIS professionals working in polytechnic libraries for efficient, goal-oriented, and smooth functioning of the library so that they will be systematically and scientifically developed concerning the ICT environment. Some of the other objectives of the study are as follows:

- To identify the current levels of ICT competencies possessed by LIS professionals working in polytechnic libraries.
- To identify the ICT competencies needed by LIS professionals in the future.
- To formulate an ICT competency framework for polytechnic library personnel.

Research Questions

The following questions will be addressed to answer the aims and objectives of the research such as:

- What is the current situation regarding ICT-related competencies possessed by the LIS professionals?
- What are the ICT competencies that library users expect from LIS professionals?
- What are the training needs of LIS professionals for acquiring expected ICT competencies?

Hypothesis

H_0: There is no ICT competency among the LIS professionals in the three selected Polytechnics

H_1: There is ICT competency among the LIS professionals in the three selected Polytechnics

Scope of the Study

The current research, titled "Polytechnic Library Personnel Competency Framework in ICT Environment: A Study of Some Selected Polytechnic Libraries in the North West", focuses on the LIS personnel who work in the libraries of three polytechnics in Nigeria's north western region. ICT has been used in all of these polytechnic libraries for library activities and services. They are delivering digital information services to their users/subscribers, but they need to improve. These polytechnic libraries have been identified with the help of three indicators viz., existing ICT infrastructure, ICT competency levels of professionals working there, and ICT-based library functions and services provided by the libraries. The working practices of professionals and the ICT applications formed the domain of this study. The present study covers the permanent professionals working in the libraries. Additionally, various applied ICT competencies and their impact are confined to the geographical area of the North West wherein the consideration is restricted to three polytechnics viz., federal polytechnic, Kaura Namoda, Nuhu Bamalli Polytechnic, Zaria and Kaduna Polytechnic, Kaduna**.**

Limitations of the Study

The study is limited to permanent LIS experts working in three polytechnics in Nigeria's northwestern region to collect data efficiently. Contract professionals would not be included in the study because they were only engaged for a brief length of time and so could not be trusted for dependability and validity. The limitation also concerns the time dimension of its coverage as it is difficult to study all the polytechnics in a limited time. Financial constraints are a big stumbling block to traveling to different locations for data collection for the study as well as security.

II. Review of Related Works

A literature review typically holds the promise of disseminating the findings of various surveys and highlights the published information of a particular subject area within a specified period. It can be just a summary of the sources or an elaborate exposition of the subject area. Generally speaking, the main purpose of the literature review is to analyse critically a segment of a published body of knowledge through summary, classification, comparison of prior research studies, and theoretical articles after the threadbare examination. An evaluation of the literature logically leads to the research questions. It also provides the researchers with a handy portable guide on a particular topic. If the researchers have a paucity of time to conduct research, the Literature review can provide a mirror or overview of prior research or act as a stepping stone to initiate research. Literature reviews include books, journal articles, web-based resources, newspapers, magazines, theses, dissertations, conference proceedings, reports, reviews, course contents, and documentaries. Reviews of related and existing literature constitute an essential part of the research study. It enables the researcher to get an understanding and clear insight into a specific field of study. Additionally, it also provides an opportunity to gain in-depth knowledge about time-tested methods and procedures adopted and ensure laying a path for possible interpretations in such similar studies.

On perusal of literature, it is observed that there is varied and diverse literature available towards various applications of ICT in different libraries and ICT competencies of LIS professionals. Bibliographic research revealed a narrow spectrum of research studies made on ICT competencies of LIS professionals in polytechnic library systems but a wide spectrum in academic libraries. Adebisi (2020) recognized some of the benefits of ICT to library operation to include speed and ease of access to information, remote access, that is, unlimited access which combats the constraint of closing hours that restricted access to a particular time and hours.

Odunewu and Haliso (2019) opined that successful completion of tasks within designated period and effective delivery of services by librarians are among the indicators of good job performance which in turn predicts the overall success of the library. Job performance refers to how people perform their tasks as set against particular standards. Librarians' job performance can in this context be described as an act of carrying out functions, tasks or schedules relating to librarianship in a particular time and manner expected of a trained librarian. Librarians in public university libraries are expected to render quality services to library users, which in turn predict the quality of its workforce (Igbinovia and Popoola, 2016).

A good way to think about ICT is to consider all the uses of digital technology that already exist that is being used in helping individuals, businesses and organizations to manage information. ICT covers any product that is capable of storing, retrieving, manipulating, transmitting or receiving information electronically in a digital form. The term ICT is also used to refer to the convergence of audio-visual and telephone networks with

computer networks through a single cabling or link system. Rouse (2017) on the other hand opines that ICT is the information infrastructure and component that enable modern computing. She further stressed that ICT is a term that encompasses all information technology, networking components and application software that allow interaction in a digital world.

In this ICT-oriented environment, library professionals must become ICT literate in order to survive. A recent study by Cherinet (2018) has also mentioned that since skills are essential for the success of individuals and libraries, the universities should include emerging skills in curricula to meet the needs of the 21st - century librarians and expectation of potential employer. LIS professional must update and upgrade their ICT skills to perform better in the digital environment. Heavy reliance on technology suggests that LIS professionals must be able to adapt and learn new technologies, advanced skills, and tools such as Web 2.0, for academic success.

Another article by same author (Cherinet, 2018) shows that "perpetual skill, communication skill as one of the required skills unanimously in all job ads. The findings also reveal that knowledge and skills about content management and sharing tools are frequently required by employers." ICT skills deal with the application of ICT to a specific purpose. It is not just about using a software package or using operating systems, neither is it concerned with keyboarding skills and students' ability to copy type or follow instructions. Instead, ICT skills are about the ability to use their knowledge about ICT to find, develop and present information; whether it is text, image or number, or this entire integrated task". It is thus clear that LIS professionals must learn and adjust to a rapidly changing environment and acquire competencies and skills to become a knowledgeable asset to the library. Library professionals then teach these skills to users and other supporting staffs to enable them to search navigate and find the right knowledge from a world of information.

Bansode and Viswe (2017) in their study indicate "that the ICT literacy level of the library professionals working in university libraries in Maharashtra is satisfactory. Majority of library professionals has acquired the basic ICT literacy skills which are required to handle day to day library operations, but still few library professionals need to enhance their literacy level in the area of open-source library automation software, digital library software, and institutional repository software, etc."

Raju (2017) in his study discusses "IT knowledge and skills needed by academic librarians in the digital library environment. Result reveal that 70 to 75 per cent of job advertisements in the academic library sector emphasis on advanced IT skills (Integrated library system, advanced computer skills, digitization process, web design and development, IR, and technical skills which are repositories, digitization, and curation of research data and other digital content etc.) which librarian should possess. Librarians require IT knowledge and skills to a significant extent in the academic library environment. As research on institutional repository management grow and become complex, the literature addressing different areas of prerequisite skills and competencies for scholarly communication keeps growing too.

Nemati-Anaraki and Tavassoli-Farahi (2018) proposed a conceptual model for scholarly communication through institutional repositories to facilitate and simplify the creation and management of the repository by experts and librarians. Equally, Oguche (2018) identified insufficient skills and competencies for management of the repository among the challenges of the practice of institutional repositories in Nigeria. Similarly, Adam and Kiran (2019) and Hussain et al, (2017b) showed that there is inadequate knowledge and skills in developing standard interface and providing effective user information needs for achieving the best practice of institutional repository in Nigeria.

Jain and Jain (2017) carried out a study on advancement in Information and communication technologies (ICTs) which has revolutionized the scenario of LIS education and practice everywhere to a significant extent. Khan, Khan, Bhatti, and Bhatti (2017) explored the essential digital competencies for designing, developing and skillful managing of digital libraries. De-Sarkar (2017) described how libraries are incorporating photo-sharing applications into the collection development and service provision to encourage improved user participation around digital inclusion. Aung, Erdt and Theng (2017) have discussed about evaluating research output which has tremendously been changed, and the pattern of dissemination of information in the contemporary electronic age has become very easier and convenient through online mode even in many cases in open access platforms. Similarly, Kumar (2017) observed that information technology can also be used in the library for email, voice mail, telephone and fax communications; videoconferencing, social media, library security including short circuit television (CCTV). According to Adebayo, Ahmed and Adeniran (2018) the challenges facing libraries use of ICT are enormous, prominent among which include inadequate funding; high cost of ICT software and/or operation; poor maintenance culture of ICT equipment in libraries; unstable power supply; dearth of ICT policies; lack of technical ICT skills and competencies among library personnel; technophobia; insufficient bandwidth and copyright and intellectual property management problems.

Kayal, Bandapadnyry and Banerjee (2015) observed that despite acquiring formal and academic qualifications there remain some gaps in acquiring ICT skills amongst LIS professionals as the latest technological developments are not included in the LIS curriculum. To fill the gap, on-the-job training of personnel is very much required. In hindsight, this does not suffice to describe an ideal set of behavioural traits needed for roles. Neither have they guaranteed that LIS professionals would perform to the standards and levels lay down by organizations. The challenge to LIS professionals is mainly centred on the ability to visualize and put forth into practice, the various steps required in enabling the effective performance of respective duties. This in turn could further enable the polytechnic library to open a window wherein innovation could result in the incorporation of the ICT framework by taking into consideration a similar collection of combined competency information. Such steps could result in the creation of an environment wherein LIS professionals could learn and imbibe various ICT competencies whilst on the job. This in turn could ensure that the organization help in the creation of a standardized approach of having LIS professionals updated vis-à-vis ICT competencies. It would also ensure the professionals regarding technological advancements in LIS areas and thus increasing the accessibility of its services to all users in the library. The ICT competency framework so defined could have its outlines transparent regarding the specific job descriptions of every LIS professional. The framework so designed is indeed an effective

method of assessing, maintenance and monitoring of competencies of various personnel in the organization.

III. Methodology of the Study

The research design for this study is a descriptive survey which is appropriate when studying a phenomenon that tends to seek the opinion of the respondents without the researcher attaching his value (Palmquist, 2017). The population for the study comprises of LIS professionals working in the three selected polytechnics in the North-Western part of Nigeria, namely the Federal Polytechnic Kaura Namoda, Nuhu Bamalli Polytechnic, and Federal Polytechnic Kaduna.

Sample Population of the Study

The main targeted populations that serve to achieve the aim of this research were LIS professionals of the three polytechnics in the North western part of Nigeria. The brief description regarding professionals working in the polytechnics are mentioned in table 3.1

Table 3.1 Sample Population

S/N	Name of Polytechnic	Number of LIS Professionals		Library Users/Members (Faculty/ Students/Visitors)
		Libraries (Library Professionals)	LIS Department (Faculty)	
1	**FEDERAL POLYTECHNIC, KAURA NAMODA**	08	-	**100-150 (as per availability)**
2	**NUHU BAMALLI POLTECHNIC, ZARIA**	08	-	
3	**KADUNA POLYTECHNIC, KADUNA**	16	01	
Sub-Total		32	01	
Total		**From 132 to 152 (as per availability)**		

The professionals in the polytechnic libraries are considerably small in number and many of the professionals possess basic ICT Competencies. The sample size of the population ranges from 132 to 152 depending on the availability of the professionals and library users. The other objective of the study is to analyze the curricula of ICT course contents (graduates) in the LIS programmes spread across the different polytechnics. The course content of the select polytechnics and institutions were collected and gathered from their respective polytechnic websites.

IV. The Tool Used

Data collected through interviews and questionnaires were collected and fed into the computer for the purpose of consolidation and analyzed to find the results by using Microsoft Excel Statistical package. Questionnaire replies would be based on 'prima facie' study, various points in support of the research questions were sought and finally data in the form of tables obtained for analysis. Descriptive analyses were aimed to be written form based on the findings of analysis. In testing the dependency between the attributes, the chi-square test and P-value for independence of attributes were used.

V. Results and Analysis

The population for the study consists of LIS professionals working in the three selected polytechnic of the North western part of Nigeria. The total number of permanent professionals in LIS departments and libraries of the three polytechnics under study are 182 (table 5.1). The calculated P-value is 0.325; also the calculated Chi^2 is 0.971 while the tabulated Chi^2 is 0.103. The decision is to reject H_0 (Null Hypothesis) if calculated Chi^2 > tabulated Chi^2 or If the P-value for the calculated Chi^2 test to be greater than 0.05 (i.e., $P > 0.05$), it means the H_0 is to be rejected and accept the alternative value. If the P-value for the calculated Chi^2 is less than 0.05 (i.e., $P < 0.05$), then accept the H_0 and reject the alternative value. The conclusion can be drawn that since the calculated Chi^2 is equal to 0.971 > the tabulated Chi^2 0.103. This research work reject null hypothesis (H_0) and accept alternative hypothesis (H_1), that there is ICT competency among the LIS professionals in the three selected polytechnics. The responses collected through the questionnaires were discussed in details in this chapter.

Table 5.1 LIS professionals in three polytechnics

S/N	Name of Polytechnic	Number of LIS Professionals		P/Chi²- value
		Libraries (Library Professionals)	LIS Department (Faculty)	
1	**FEDERAL POLYTECHNIC, KAURA NAMODA**	08	-	**< 0.325/0.971**
2	**NUHU BAMALLI POLTECHNIC, ZARIA**	08	-	
3	**KADUNA POLYTECHNIC, KADUNA**	16	01	
Sub-Total		32	01	
Total		**33**		

For the purpose of study and having detailed comparative view of the ICT competencies, the population under study has been categorized into the following two groups G-1, and G-2

Response Profile

As discussed in research methodology, 255 questionnaires were distributed to gather the required information from the LIS faculty and professionals in select polytechnics. Researcher visited the professionals working in libraries for interview and handed-over the questionnaires personally to them. Lack of time with professionals to fill up the questionnaire and non-availability of some of the professionals at the time of visit was a handicap in getting the filled-in responses. In-spite of repeated visits researcher could collect 218 (85.49%) responses out of 255 questionnaires distributed to all the professionals. Polytechnic-wise response from the libraries shows the responses received from the libraries can be considered as reasonably high.

Data Analysis of Group-G1

The data gathered through questionnaire-A regarding the opinions of LIS faculty and experts was also supplemented through face-to-face semi-structured interviews where-ever felt needed to collect quantitative as well as qualitative data. Open ended questions were asked to explore the point of views and opinions of the respondents on major issues in the use of ICT, ICT competencies, adequacy of ICT course contents, availability of basic ICT infrastructure in the LIS departments, etc.

Response Profile of Group-G1

The data gathered through questionnaire-A was received from total of 12 department members (03 Doctors, 03 Chief Lecturers and 06 Principal Lecturers).

Table 5.2 Response profile for group-G1

Questionnaire Number	Group No. / LIS Professionals Of the Group	Designation	Questionnaire distributed	Questionnaire received	Response %
A	G1/ Faculty	Doctors	03	03	100.00
		Chief Lecturers	03	03	100.00
		Principal Lecturers	07	06	85.71
TOTAL			**13**	**12**	**92.30**

Table 5.2 represents the percentage of responses. There was a near perfection in receipt of responses from the respondents. The distribution of the figures clearly show the healthy involvement and sincere attitude of the respondents in showing active interest and concern with the important issues raised in the questionnaire. The response percentage shows the commitment and cooperation received. The responses were divided into the following eight sub-sections below.

Major ICT Issues

It is observed that ICT and its applications has fulfilled its promise in academic libraries as there is high percentage in the use of ICT based library functions and services. Use of ICT and its applications has also led to the exponential speed of library operational services such as cataloguing, classification, acquisition, processing storage, retrieval and dissemination of information. It is obvious that library personnel will face across various challenges, constraints, conflicts, barriers in use of ICT. Therefore respondents were asked open ended question to give their opinion on these above mentioned issues. The following are the observations:

- It was inferred that about 25% respondents mentioned that there is a lack of confidence to adopt new things, lack of interest to learn ICT and language (technological terms) barrier among the LIS professionals.
- Nearly 83% respondents vehemently advocated that the professionals must be trained in using ICT through various online services. This invariably force the LIS professionals in keeping themselves updated constantly which is not possible for everyone because of time constraints, lack of infrastructure, willingness of the authorities, lack of appropriate training and availability of financial and human resources.
- 42% respondents stated that it is imperative that constant improvement should be on a continual basis towards maintaining efficiency and effectiveness in ICT applications. This is a challenge to LIS professionals for suitable recognition of role as an information specialist.
- 17% respondents stated that training of teachers regarding latest skills and techniques on a regular basis is a serious challenge being faced by all. This is essential as the teachers have to acquire and learn before they could impart to students. Due to various factors (such as information revolution, technological advancement etc.) knowing where to find information and how to use it strategically is a big challenge.
- 33% respondents stated that complementing technology skills with an understanding of the role of ICT should be incorporated in LIS curricula. It is rather difficult to decipher towards LIS courses in relation to ICT-related and non ICT-related subjects. The degree of difficulty arises due to the fact that most of the LIS courses include ICT elements.
- 67% respondents informed that one of the greatest challenges facing educationists is ensuring that the contents of LIS courses are regularly evaluated, revised and updated so as to respond effectively in a rapidly evolving world of LIS profession. This is required as we live and work towards the betterment of LIS profession. LIS courses need to inculcate newer and comprehensive skills in areas of information literacy, information management, information searching, and communication skills along with essential ICT competencies.

ICT Competencies

As competency is a relative term and one cannot say that fulfilling of selected competencies will make one competent otherwise incompetent. The information professionals and LIS educators need to prepare themselves to possess and be equipped with a range of ICT based competencies to provide the highest quality information services. Therefore, polytechnic libraries in this era will be assessed more on their ability to satisfy their currents user needs for information and their ability to link their users to electronic databases scattered worldwide and not necessarily on their ability to buy or subscribe to information materials on paper formats. The information gathered in this question provides important guidance as to the skills sets that LIS professionals are likely to find most useful and sought after. Respondents were asked to give their opinion on ICT based competencies required by the information professionals in the polytechnic libraries. The following are the opinion of respondents regarding this question:

- 17% respondents opined that aptitude to learn and use ICT in library operations is essential. LIS professionals should not aspire to become ICT experts rather they should try to learn the application of ICT for acquisition, storage and retrieval of information.
- 42% respondents expressed that the aspects of hardware, software and networking skills, web based service skills, online database search engines, database creation, digitization, desktop publication skills be dedicatedly pursued by LIS professionals and students. Technical professional skills like information resource management, e-serial management, metadata standards e.g. Dublin core, MARC, TEI2, XML3 etc., system development, knowledge management and traditional skills are to be managed in a regulated and efficient manner.
- 75% respondents named the following attributes necessary for the effective achievement of competencies. They are namely; computer knowledge; knowledge of various relevant databases; key term searching; use of Boolean operators; handling online and offline resources; knowledge of open source software and resources; expertise to manage internet and intranet; information curation; digital preservation; mobile environment; collaboration; social media; coaching and effective facilitation to the users.
- 33% respondents opined that ICT competencies vary for different functions and jobs and therefore understanding of whether and what ICT is essential and useful for particular function with library is almost necessary for the professionals working in the libraries. LIS professionals must be competent with information retrieval and management skills; word processing and desktop publishing skills; webpage design and maintenance skills to work efficiently and effectively in the libraries. In addition, they should possess awareness about communication technologies; production and design technologies; virtual-modeling technologies; file-sharing technologies and social networking technologies so as to provide effective LIS services.
- 67% respondents opined that the LIS professionals should be well versed with ICT competencies such as webpage construction, database design, internet use and evaluation, information use and retrieval. Also they should be well conversant with emergent Web 2.0

technologies such as blogs, podcasts, wikis, Really Simple Syndication (RSS) feeds and social networks. The professionals are expected to be well versed with the areas like ICT competencies; information literacy skills; knowledge management skills which includes using e-mail, internet, databases, e-cataloguing, circulation, planning for library automation and managing automated systems along with time management and public relation skills.

- 70% respondents opined that the present day professionals are entrusted with the knowledge in areas of management competencies; resource development competencies; technical services competencies; reference and information services competencies; general competencies like storage and retrieval technologies; network technologies; communications and library automation; etc. Accordingly, they should efficiently discharge the knowledge to provide service for the betterment of LIS profession and maintenance of its standards.

Evaluation Methodology

The question regarding different approaches to evaluate ICT based competencies of students and professionals by the faculty of LIS departments was asked to know and explore about the level of ICT literacy among students and professionals. Respondents were asked to give their opinion on the evaluation methodology to be adopted for the assessment of ICT competencies. The opinion of respondents on approaches and methods of measuring ICT competencies and the analysis is as follow:

- 83% respondents felt that for professionals working in polytechnic libraries, time to time user surveys with regard to library services should be conducted. The feedback from the user's community will help in further improving the services etc. in the library. Yearly assessment of the work done by the staff should be done and some incentives should be provided to the staff.
- 25% respondents opined that evaluation are done on the basis of theoretical examination for understanding policies and also by practical examination for judging ICT based competencies. Teaching courses involving ICT content largely depends on individual faculty member's knowledge and effective applications of ICT in teaching. Since assessments depend upon classroom observations and individual student's performances, an objective evaluation is required regarding the curriculum which includes assessment of students' achievements and their subsequent accomplishments obtained as a result of teaching aptitude in classroom. The respondents felt that the most common qualitative approach for assessing the ICT competencies of LIS students is by observation of learning in the classrooms in addition to evaluation of examinations in theory and practical. Furthermore, there should be periodic assessment, task oriented exercise and working with ICT gadgets.
- 33% respondents felt that regular feedback of imparted ICT competencies is obtained by means of assignments, projects and seminars. In addition to regular examinations etc., students are to be encouraged to give impromptu seminars.

ICT Course Content

Respondents were asked to give their opinion on the adequacy of ICT course contents imparted by LIS curriculum in polytechnic departments. The purpose of asking this question is to develop the understanding that have helped to deal with staff and students problems in positive way, helped in improving teaching methods, students learning and the development of the curriculum. The opinions of respondents regarding adequacy of ICT course contents is as follow:

- 25% faculty mentioned that they could provide feedback about various department courses rather than ICT requirements. In their opinion, ICT component at the various levels (i.e., certificate, diploma, graduate, postgraduate, research course work, etc.) is sufficient for a novice to work in a library set up. LIS Faculty should constantly revise the curriculum of its own programmes. Furthermore, they also opined that certain weightage in relation to be given with the fundamentals of librarianship and functional knowledge.
- 67% respondents mentioned that some updates are required on web based services, virtual learning, use of social media in teaching and learning, content development etc. Emphasis must be more on imparting service skills.
- 17% respondents opined that the ICT course contents are too broad and it is impossible towards deciphering about the applicability for all LIS schools. The existing course structure is rigid and inflexible to accommodate emerging needs of the information society and distant learning education. However, joint and combined degrees of other related departments, joint research and development projects could help to maintain adequate ICT course contents.
- 42% faculty mentioned that ICT based examination be compulsorily included in every semester. It is necessary that 1/3rd of courses be ICT-oriented and integration of expertise of teaching staff be done from related disciplines also. In the LIS course, it is imperative that relevant and recommended practical ICT training be incorporated in programme besides in other courses as well. It is also recommended that the programme be restructured offering in its curricula, the ICT related activities. ICT in isolation, has very little to offer but forms an important basic constituent in library education programmes.
- 58% respondents mentioned that it is urgently required to change the admissions criteria and syllabi on a frequent basis and to maintain continuity in this aspect. LIS programmes are made dynamic so as to offer online courses that could make use of ICT. Presently the courses offered are too heavily theory based and dominantly discipline-oriented. The modern library skills are not being adequately included and covered in the present courses offered.
- 19% respondents confirmed that LIS graduates were well trained in ICT competencies while imparting course and all students were trained on different library procedures

by applying all the required practical training of the ICT courses but the work place developed fast enough in terms of technology.

ICT Infrastructure

Respondents were asked to give their opinion on the availability of basic ICT infrastructure in the LIS departments and libraries. The purpose of asking this question is to find out the ways to know about the present status of ICT infrastructural facilities available in polytechnic departments and libraries in relations to the requirements for the library services delivery in this electronic age. LIS educators cannot work in isolation. The LIS profession as a whole must work together collaboratively to ensure it has a bright and relevant future. Collaboration could be made between LIS departments and polytechnic libraries, locally and internationally in areas of availability of basic ICT infrastructure, if not in order. The opinion of respondents on the availability of basic ICT infrastructure in the LIS departments and libraries is as follow:

- 8% respondents stated that they could not provide a complete picture of all the LIS departments but in some departments, for academic purposes they have proper infrastructure and are satisfactory at present.
- 17% respondents informed that departments should have at least well equipped computer lab with required software's. Library should have access center with high speed network connectivity but generally observed that the situation is better and improving.
- 67% faculty opined that most of the students neither use ICT for research nor for online activities due to scarcity of infrastructure besides the hardware and software becomes obsolete after few years from purchase. There is no such system in place for automatic upgrade of hardware and software, resulting in poor ICT based competencies. Internet access was readily available, but majority of possible usage encountered downtime repeatedly. Computers are placed in separate laboratories instead of being in the classrooms wherein learning and teaching are imparted. Students and teachers had access to ICT applications during ICT courses only and not for other courses. It is recommended for having computers in the classrooms and has its usage in different course domains.
- 58% faculty stated that LIS education is largely dependent on computer hardware and software, internet connectivity, ICT competent staff and well equipped laboratories. Unfortunately, necessary funding does not cover these essentials. Departments are deficient and hamstrung in having the technological resources (including high speed PCs, local area networks, printing and scanning facilities, and also audio-visual materials). Most of these deficiencies are in use of hardware, software and other technological resources deemed essential for course instruction of LIS. Sometimes in-house maintenance and technical support are infrequently available. Procedures are very complex to procure necessary hardware and software due to lack of adequate financial support from the department which in turn are grossly inadequate for laboratories to meet the demands of students. The operation of ICT laboratories is inadequate in terms of usage by student and there were limited access to databases, majority being commercially subscribed.
- 25% respondents felt that the basic minimum requirements are present in department but providing adequate ICT hardware and software needs continuous support and development so that it could meet the standards of the programme and its learners. A substantial number of students are admitted to the programme each semester but they do not get adequate support regarding ICT infrastructure.

ICT Provisions for Continuing Professional Development

LIS professionals including faculty members and experts deliver the lectures to impart training to professionals and students in CEP, SDP, refresher and orientation courses, etc. The purpose of asking this question is to find out whether the current system and methodology of imparting training is appropriate or not and if there is scope for improvement, then to find out the ways to do so. Therefore respondents were asked to give their opinion on the current provisions in ICT for staff development activities in different categories. The opinions are given as follow:

- 17% responses candidly refuse to comment.
- 25% responses reveal that many institutes and training centers are arranging CEP and SDP. They are relevant to every category of professionals. Regular trainings and development activities must be organized to help professionals to grow and which will further enhance the satisfaction level of their users.
- 33% respondents stated that they witnessed that many a times the librarians or immediate seniors do not allow their juniors to go for such events. They also admitted that since the libraries are understaffed and sending juniors for training means the library work will suffer. So some type of provisions must be there to solve this problem.
- 58% respondents informed that refresher courses and other programmes including seminars conferences are quite frequently held but this depends on the teaching staff and the training areas. Teachers of ICT courses possess different levels of ICT competencies, which translate into teachings skills in classrooms. Subsequently it depends wherein the student took the course of concerned teacher. Moreover, in some organizations, students learn very good skills while in others there is no technology involved. They also admitted that they could not train them all in the same place because they were forced to send only a limited number of students to these organizations.
- Approximately about 75% responses reveal that due to evolving (new) technologies, faculty needs to be made aware of these by enabling them to attend refresher courses and seminars as frequently as possible to have the upgraded skills in classrooms. The existing format and forum of imparting ICT education (related to LIS) by means of SDP and CEP are adequate enough for providing students and professionals, all the required competencies. But the department needs a complete

changeover with regard to ICT facilities and training being given to faculty members with special emphasis on ICT course content. Current syllabi and courses should be thoroughly revisited and revised keeping in view the current situational position of LIS courses. Department should have a regular process of having intake of visiting faculty from organizations and others in the area of ICT competencies towards interaction with faculty and students.

ICT Topics

Just as new emerging ICT application is to be added as and when arrived in the curriculum and training programs, likewise old and obsolete study materials are to be deleted so that the time saved will be utilized in learning updated knowledge and skills. Respondents were asked to give their opinion on the inclusion and/or deletion of topics related to ICT in the curriculum and training programmes for the LIS professionals of polytechnic libraries. Following analysis represents the opinion of respondent against this question:

- The responses of 33% respondents revealed that online library, database creation, mobile environment, on-line databases search, digitization, web based services, information resource management, e-serial management and social media should be included in the curriculum and training programmes.
- 8% respondents stated that all courses have the relevant features. However, due to the fact that ICT is evolving and what is new today becomes obsolete very fast, requirement and application of constant up-gradation of ICT tools in library, CEP and SDP are the need of an hour. The bare minimum skills are needed to run hybrid libraries but at the same time continuous training is also required.
- 67% respondents have given the feedback that since library is a service oriented organization therefore any relevant skills that are required for providing efficient service must be the main focus of the programme. New ICT topics useful for LIS should be included. Topics like information audit; web search strategies; online information marketing; content development; metadata and metadata extraction; multimedia applications; web-2.0 tools; digital archives; cataloging of e-resources; digital library software; IT oriented project work and apprentice be added in LIS courses.
- 42% response shows agreement for the promotion of concepts of internship of three to six month or training ranging from six to twelve weeks in reputed and well established libraries. This training or internship is made part of the course. Specific areas like ICT oriented project work and ICT oriented apprentice should be introduced. In addition to existing ICT course contents in LIS syllabus, the topics on library blog designing, digital archives, web-2.0 tools and information audit can be included for a more comprehensive coverage of syllabus.
- 33% respondents advocated regular round table conference be arranged with outside experts in field, organizations and other libraries alongside the department so that brain storming of fresh ideas, existing syllabi and course curriculum be revisited and revised accordingly as per the existing environment of LIS courses.

Other ICT Issues

As the list of questions is by no means exhaustive, therefore respondents were asked to give their opinion on any other ICT related issues regarding LIS professionals so that they can provide comments much liberally which they feel necessary to communicate and are relevant in current scenario. Following are the opinion of respondent against this question:

- 8% respondents had stated that they could not add to more than already provided.
- 17% respondents informed that librarianship is a noble profession and every professional should perform their duties ethically. Therefore, adequate knowledge of ICT and its application in libraries with a positive attitude can make the real difference between the real and desired situation.
- 33% responses reveal that managing and working, both in a modern academic library has become a highly specialized job, which requires proactive attitude towards change and continuous reinvention of the competence among professionals. Library is a service oriented organization therefore any skills that are required for providing efficient services must be the main focus of the curriculum design. Formal education has not helped in getting expertise and skill in topics and neither helped in evaluating information resources in electronic format, handling multimedia systems.
- 17% of respondents stated that the students are not given enough practical training during their LIS studies, 70-75% of courses are theoretical with only 25-30% left for practical training, which is grossly inadequate for obtaining the requisite skills.
- 17% respondents stated that the LIS studies should have at least 50% practicals. If the students wish to acquire the necessary ICT competencies, therefore it is deemed essential for ICT to be included in all daily applications.
- 8% respondents had stated that the department offers selective ICT courses as electives, these results in students not getting an opportunity to learn all the required skills.
- 25% respondents stated that teaching staff should update their own ICT competencies on a regular and continuous basis and should display their ICT competencies for encouragement of the students towards its use to improve their skills. Some of LIS teaching staff lack the requisite ICT competencies themselves but are not readily admitted. This result in improper and limited impart of courses to students which in turn results in largely ignorant and remain oblivious to positive aspects of ICT tools and technologies. The shortcomings consolidate into improper trained students.

Data Analysis of Group-G2

The data gathered through questionnaire-B was received from total of 45 supervisory professionals. Tables from 5.3a to 5.3b represent designation, and gender-wise responses respectively.

Table 5.3a Designation-wise response profile for group G2

Questionnaire Number	Group No./ Professionals of the Group	Designation	Questionnaire distributed	Questionnaire received	Response %
B	G2/ Supervisory Professionals	Librarian	05	04	80.00
		Deputy Librarian	15	14	93.33
		Assistant Librarian / Media Librarian / Information Scientist	29	27	93.10
TOTAL			**49**	**45**	**91.83**

There was a healthy to near perfection in receipt of responses from the respondents. The distribution of the figures clearly show the healthy involvement and sincere attitude of the respondents in showing active interest and concern to the important issues raised in the questionnaire. The response percentage shows the commitment and cooperation received from the respondents. It is observed that there is an overwhelming dominance of male gender as compared with female gender. The rather unequal dominant feature could be due to various reasons, chiefly due to non-availability of female gender professionals in LIS field. Other reasons could be varied amongst of which the qualifications, work experience etc., could be a limiting factor.

Table 5.3b Gender-wise response profile for group-G2

S. No.	Designation of Respondents	Frequency	Gender	
			Male	Female
1	Librarian	04 (8.88%)	04 (100.00%)	-
2	Deputy Librarian	14 (31.11%)	09 (64.29%)	05 (35.71%)
3	Assistant Librarian /	27 (60.00%)	24 (88.89%)	03 (11.11%)
TOTAL		**45**	**37** (82.23%)	**08** (17.78%)

For the post of librarian, there is total absence of female gender in all the polytechnics while the in case of other designations i.e., DL and AL, there are a large pre-dominance of male gender. This displays the unequal distribution of employment of female professionals not being selected or appointed for various reasons.

ICT Competencies of Library Professionals'

User expectation from any information providing system is to make available directly or remotely and in real time the needed information, format notwithstanding. In the polytechnic environment, the library supports teaching, learning and research with information materials of various types. The ICT facilities applied in the library in general and also in particular sections are based on the functions performed therein. Supervisory professionals of all the polytechnic libraries were asked about their opinion regarding handling efficiency of ICT based library functions and services of the professionals whom they supervise. This question ascertains the efficiency of the library professionals in ICT environment. The result of this survey will help to know about the strength and weakness of ICT based competencies on the basis of the professional qualifications i.e., degree levels of the professionals working in the libraries. Sub-sections 5.4 represents the opinion of supervisory professionals regarding efficiency in handling of ICT based library functions and services by the professionals, whom they supervise, trained at various degree levels i.e., graduate, postgraduate, (with emphasis on Bachelor's degree as the highest professional qualification) on the following competency levels.

- Level – I: Basic ICT Competencies
  - Level Ia: Basic Awareness of ICT
  - Level Ib: Basic Windows Functionality
  - Level Ic: Internet and Websites Handling
- Level – II: ICT Competencies by Function (Library Services)
  - Level IIa: Working Knowledge with ICT tools
  - Level IIb: Workstation Skills

- Level IIc: Analytical and Problem Solving Skills

➢ Level – III: ICT Expertise

- Level IIIa: Planning and Management of ICT services
- Level IIIb: Learning Skills
- Level IIIc: Conceptual Thinking Skills

ICT Competencies of Professionals' Having Bachelor's Degree

Table 5.4 represents the opinion of supervisory professionals regarding ICT competencies shown by the professionals, whom they supervise having bachelor's degree as highest professional qualification. The data revealed a diverse display of varying aptitudes regarding ICT competencies possessed by LIS professionals. In competency level Ia 'Basic Awareness', 2% professionals had manageable skills of ICT based library functions and services. 11% professionals had enhanced moderation skills. Contrary to these professionals, 36% professionals could manage it satisfactorily. About 50% could manage the level completely. In case of level Ib 'Basic Windows Functionality', there are about 5% professionals that could manage considerably, 41% could manage moderately while 27% could manage it satisfactorily. About 27% could manage the level completely. In level Ic regarding 'Internet and Websites Handling', about 6.81% could not manage, about 59% could manage considerably and 30% could manage it moderately. About 5% of professionals could manage it satisfactorily. Accordingly, these findings reveal that LIS professionals are completely aware and have a basic understanding of fundamental ICT competencies.

Table 5.4 ICT competencies of professionals' having Bachelor's degree

CL	Cannot Manage	Somewhat Manage	Moderately Manage	Satisfactory Manage	Completely Manage
Ia	-	1 (2.27%)	5 (11.36%)	16 (36.36%)	22 (50.00%)
Ib	-	2 (4.55%)	18 (40.91%)	12 (27.27%)	12 (27.27%)
Ic	3 (6.81%)	26(59.09%)	13 (29.55%)	2 (4.55%)	-
IIa	38 (86.36%)	5 (11.36%)	1 (2.27%)	-	-
IIb	43 (97.73%)	1 (2.27%)	-	-	-
IIc	44 (100.00%)	-	-	-	-
IIIa	44 (100.00%)	-	-	-	-
IIIb	44 (100.00%)	-	-	-	-
IIIc	44 (100.00%)	-	-	-	-

The competencies regarding 'Working Knowledge' i.e., level IIa, about 86% of professionals could not manage ICT based library functions and services. About 11% could manage considerably, 2% professionals managed it moderately. In level IIb regarding 'Workstation Skills', about 98% could not manage the competency level. Only about 2% of professionals could manage ICT services considerably. Overall, there is a mixed bag of understandings among the LIS professionals having bachelor's degree in LIS. Professionals were not in a position to manage the competency levels either in IIa, IIb, IIc, IIIa, IIIb or IIIc. Although it is noted that there is a significant relationship between the frequency (professionals with bachelor's degree) and the levels of competency but the fact remains that four levels viz., IIc, IIIa, IIIb and IIIc, shows a 100% apparent incompetence. This is a major concern in respect of abilities and capabilities of the LIS professionals with bachelor's degree.

Time Period Required To Learn ICT

Supervisory professionals were asked about their opinion regarding minimum number of years (time period) required to learn the ICT related work by newly appointed professionals having LIS degrees at graduate levels. Table 5.5 represents the analysis of respondents' opinion regarding number of years required to learn the ICT related work and discharges the duties independently by newly appointed library professionals having bachelor's degrees as their highest qualifications. From the data it is obvious that the graduates required 1 to 4 years to learn the ICT related work which includes 53% professionals take less than 1 year, 42 % of professionals take up to 2 years, 2.22% of professionals up to 3 and 4 years each. This clearly shows that ICT work experience should be included mandatory in the curriculum and more specifically at this level. This proves that degree level has a distinct relation to the number of years required to learn the ICT related work by the library professionals.

Table 5.5 Time period required to learn the ICT related work

Competency/ → Degree Level ↓	**Opinion of supervisory professionals regarding number of years required to learn the ICT related work by the library professionals' whom they supervise.**				
	>5 Years	4 Years	3 Years	2 Years	<1 Year
Bachelor's	-	01(2.22%)	01 (2.22%)	19 (42.22%)	24 (53.33%)

Although it is encouraging to note that there is a significant relationship between the frequency and the level of competency levels with special reference to the requisite years being less than one year, however, requirement of more than one year towards acquiring ICT related competencies give an impression that there could be having some understanding difficulties.

Supervisory professionals were asked about in-house training programmes, CEP/ SDP etc., conducted by the polytechnics libraries for library professionals. Table 5.6 represents the analysis of respondent's opinion regarding various types of training programmes/CEP/SDP conducted by the polytechnics libraries.

Training Programmes

Table 5.6 Training programmes conducted by polytechnics

S. No.	**Training Programmes/ CEP/ SDP**	**In-house Training programmes/ CEP/ SDP conducted by the polytechnics libraries**		
		KNDP	**NBMP**	**KADP**
1	Short-Term Course	No	Yes	Yes
2	Workshops	Yes	Yes	Yes
3	Individual Training by Colleague	Yes	Yes	Yes
4	Training via Online	No	No	No
5	Refresher Course	No	Yes	No
6	Orientation Course	No	Yes	No
7	Lectures/ Seminars	Yes	Yes	No
8	Conference	Yes	Yes	Yes

***KNDP= kaura namoda polytechnic, *NBMP= nuhu bamalli polytechnic, *KADP= kaduna polytechnic**

From the responses, it reveals that only NBMP and KADP conduct 'short term courses' while KNDP could not do so. The aspects of 'workshops' and 'individual training by colleagues' were conducted by all the polytechnics. In 'training via online', none of the school conducts the 'training via online'. The 'refresher courses' were conducted by NBMP only while KNDP and KADP did not conduct this type of course. The 'orientation courses' were conducted by NBMP only. The aspects of lectures and seminars were conducted by KNDP and NBMP while KADP did not conduct any. The last aspects of 'conferences' were conducted by all polytechnics. The analysis shows that the LIS departments/ libraries have a positive attitude towards participation of staff in the various CEP/ SDP conducted by each polytechnic.

Practical Orientation and Training

Respondents were asked about their opinion regarding need of practical orientation and training before graduates and postgraduates are put on the job. It is observed from table 5.7 that maximum number of supervisory professionals (49%) agreed for the need of practical orientation and training of LIS professionals at graduate level. 29% of the supervisory professionals partly agreed, 13.33% strongly agreed and only 9% dis-agree for the need of practical orientation and training of LIS professionals at graduate level.

Table 5.7 Practical orientation and training

Degree Level	Opinion of supervisory professionals regarding need of practical orientation and training to the library professionals' whom they supervise				
	Strongly Agree	Agree	Partly Agree	Dis-Agree	Strongly Dis-Agree
Graduates	**06** (13.33%)	**22** (48.89%)	**13** (28.89%)	**04** (8.89%)	-

ICT Course Content Offered By LIS Schools

Respondents were asked about their opinion regarding thoroughness of ICT component in the core, electives and optional papers offered in LIS schools. It is observed from table 5.8 that 56% of supervisory professionals partly agreed and while 33.33% dis-agreed on the opinion that ICT component is thoroughly included in core and elective papers offered in LIS schools at graduate level.

Table 5.8 Thoroughness of ICT course

Courses	Opinion of supervisory professionals regarding thoroughness of ICT component in the core/ electives / optional papers Offered in LIS schools at graduate levels.				
	Strongly Agree	Agree	Partly Agree	Dis-Agree	Strongly Dis-Agree
Core	-	05 (11.11%)	25 (55.55%)	15 (33.33%)	-
Electives	03 (6.67%)	03 (6.67%)	21 (46.66%)	18 (40.00%)	-

In case of elective papers 03 (7%) of professionals strongly agreed, equal number of professionals i.e., 03 (7%) agreed. Further 21 (47%) partly agreed and 18 (40.00%) of professionals dis-agreed on the opinion for thoroughness of ICT component at levels. No one opined for optional papers.

Major Problems In Implementation Of ICT Applications

Respondents were asked about their opinion regarding prominent problems they generally faced during implementation and in applying ICT based services in the library to the optimum level of satisfaction. From the opinions of the respondents (table 5.9), it is inferred that lack of knowledge on part of library staff is one of the major problem mentioned by maximum number of professionals (96%). Other related issues expressed by professionals are namely: inadequate staff strength (91%), inadequate training in ICT applications (87%) and inadequate funding (82%).

Table 5.9 Problems in implementation of ICT based library services

S.No.	PROBLEMS	FREQUENCY(#N)	% OF CASES
1	Lack of knowledge on part of library staff	43	95.56
2	Inadequate staff strength	41	91.11
3	Inadequate training in ICT Application	39	86.67
4	Inadequate funding	37	82.22
5	Lack of support from authorities	33	73.33
6	Negligible demands from users to ICT	27	60.00
7	Lack of infrastructure	19	42.22
8	Lack of co-ordination among library staff	14	31.11
9	Lack of support from polytechnic administration and management	13	28.89
10	Ever increasing cost of ICT infrastructure and resources	11	24.44
11	Inadequate support and initiative from professional associations in conducting specialized training programmes	07	15.55
12	Mental block of Fear of learning	06	13.33

13	Insufficient facilities	03	6.67
14	Inadequate promotional avenues in careers	01	2.22
15	Insufficient back up facilities	01	2.22

#N = 45 (multiple response)

Others issues e.g. negligible support from authorities were indicated by some professionals (73%) and negligible demands from users to ICT (60%). Only few professionals had opinion that lack of infrastructure (42%) and lack of co-ordination among library staff (31%) caused problems in effective use of ICT. Lack of support from polytechnic administration and management was cited as an issue by very few professionals (29%) followed by ever increasing cost of ICT infrastructure and resources (24%), inadequate support and initiative from professional associations in conducting specialized training programmes (15.55%), Mental block of fear of learning (13%). 7% of professionals opined that insufficient ICT hardware and software hindered implementation of ICT based library services.

Few library professionals (2%) also cited inadequate promotional avenues in careers as a problem for ineffective implementation of ICT application. From the survey, it was clear that all the polytechnics have proper ICT infrastructure but were not properly utilized in the absence of annual maintenance contract (AMC). Many times computer systems and soft wares were found to be not in working conditions, even though they incurred heavy cost for AMC‟s. Separate funds are not allocated for ICT infrastructure and ICT based Library services. Lack of maintenance support; incompetency's in ICT, absence of LIS professionals; vacant positions in libraries, etc., are cited as reasons for not implementing the ICT based functions services in the polytechnic libraries.

VI. ICT COMPETENCY FRAMEWORK FOR LIS PROFESSIONALS IN NIGERIA: A PROPOSED MODEL AND DESIGN

Competencies within this framework would be defined as the application of professionals' ICT skills and capability to effectively achieve results in enabling library users and students to become creative learners and responsible persons. The survey findings would result in creating a model of LIS competency framework that would be strongly valued by both polytechnic departments and libraries.

The ICT competency framework for LIS professionals (ICT-CF-LIS) will be arranged and developed in three successive levels of competencies as follows:

- **Level I: Basic ICT Competencies**
- **Level II: ICT Competencies By Function**
- **Level III: ICT Expertise** and

Each of these competencies could be defined in three successive sub-levels as follows:

- **Sub-Levels Of Basic ICT Competencies (Level-I)** would include Basic/General Awareness, Basic Windows Functionality and Internet and Websites Handling
- **Sub-Levels Of ICT Competencies By Function (Level-II)** would include Working knowledge, Workstation Skills and Analytical and Problem Solving Skills
- **Sub-Levels Of ICT Expertise (Level-III)** would include Planning and Management, Conceptual Thinking Skills and Learning Skills to reflect the context within which the competencies are going to be used and in accordance with the profession levels, designation, professional qualifications and work-profile of the LIS professionals.

All these levels are incorporated for the arrangement and development of the ICT-CF-LIS professionals in Nigeria. The use of pervasive tools which cover by and large all the areas of LIS and encompassing the entire working of the department is to be well thought out by the LIS professionals. In order to achieve this aspect, the integrative approach would have to be considered involving different areas. Similarly the constant flux of the learning, motivation and formation of guidelines need to be well thought out prior to imparting of the learning skills amongst LIS professionals. The conceptual thinking skills of self-management attributes; initiative being taken at one's own level; able to deal with new and innovative ideas and how to implement these in the ICT areas constitute an important tool for exercising due diligence when introducing fresh and newer ideas in LIS areas. Finally the outlook of the LIS professionals in maintaining an objective, flexible and practical approach and desist from negative, subjective and rigid outlook in resolving various ICT problems would go a long way in solving many intricate problems in ICT. Figure 1 represents the description of ICT-CF-LIS. The three competency levels being included in the framework are proposed to be disseminated and dispersed amongst all the levels of the LIS professionals inclusive of all designations and responsibilities. These include entry, mid, senior and finally executive levels comprising of leadership professionals. Together all the factors would ultimately result in enabling of ICT competencies amongst LIS professionals.

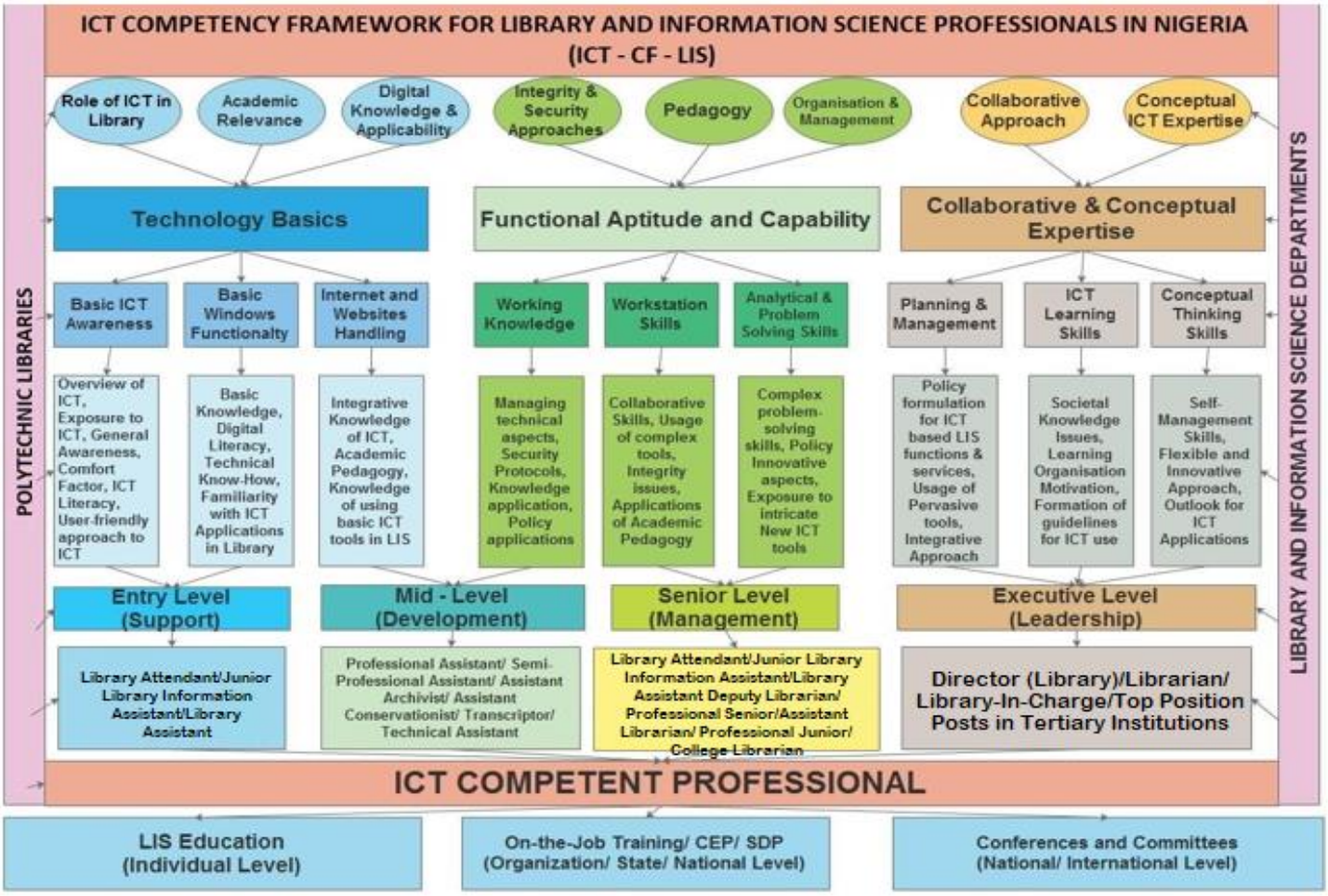

Figure1 ICT-CF-LIS.

VII. CONCLUSION

LIS professionals working for polytechnic libraries are proactively seeking to improve their ICT competencies throughout their career for providing efficient library services. The on-going development of ICT competencies of LIS professionals is a high priority. The technological learning skills and means to acquire sufficient knowledge in specific and appropriate areas are vital for LIS professionals to tackle problem areas, keep abreast of emerging developments and be effective in performing several job tasks. The ICT-CF-LIS results in creating model strongly valued by both polytechnic departments and libraries. Competency framework is planned for continuing education of librarians as a tool to adapt LIS curricula in continued flux of evolving aspirations. Also in context of rising expectations of LIS professionals and users; to support analytical assessment according to the professional development plan; to foster career-long education; lifelong learning among librarians and to check over quality control of polytechnic personnel in terms of ICT competencies.

The proposed model of ICT-CF-LIS is essentially a knowledge based information dissemination system in which co-ordination among different LIS communities is at top priority. The main pivot of a successful competency framework is the understanding of fundamentals of ICT and its applicability in various streams of resource generated information. This could possibly lead to better information dissemination in the age of technological era wherein newer forms of ICT are being developed as we speak and are relatively unknown to us. Only a continued persistent effort on a regular basis could one hope to master the ICT competencies within the shortest delay at the earliest through constant feedback and interaction amongst the LIS professionals. The ICTs competency framework is designed in such manner which could entail in providing proper guidance and follow up of all LIS professionals in their future endeavours in applicability of ICT in LIS areas.

It helps in achieving the following objectives:

- To ensure nationwide standardization information on ICT based competencies.
- To initiate a regular academic related meeting to thrash out various problems associated with understanding issues of framework and work out solutions.
- To help LIS professionals working in polytechnic libraries in planning of ICT infrastructure and procurement of ICT based information resources.
- To provide uniform workforce in academic or polytechnic libraries.

- To support LIS scholars and professionals in continued professional development.
- To collect important information for learning and updating ICT competencies required for providing efficient and up-to-date library services.
- To collect feedback from LIS professionals and library users for better planning and improvement of ICT based library functions and services in future.

The framework establishes a common bond throughout the LIS community so that everyone is working together, and it is an integral part of all other strategy systems, processes and tools. It will help the professionals to imbibe the following qualities required and deemed essential towards a rewarding self-actualization career:

- Introduction to technology literacy, in-depth knowledge resulting in creation of knowledge.
- Understand what it takes to be technically (independently) successful.
- Take more control over their ICT competencies.
- Know expected ICT performance measures
- Use of basic, complex and pervasive tools of ICT
- Assist in achieving development goals in ICT based functions and services
- Creating a common bond throughout the LIS community
- Ties into other ICT plans, strategies and tools
- Emerging as a change catalyst resulting from continuous creation of engaging and effective change process in development of ICT; understanding and communicating the need for ICT applications and its necessity in today's LIS syllabus in order to preserve its identity among other subject areas.
- It also builds and helps the LIS professionals in need for engage and consult with each other towards a better understanding of future LIS curriculum
- It would result in focusing more effectively on service delivery, academia and other key performance indicators and how ICT relates to LIS profession in order to positively impact the standard of academics.

The intention of the competency framework being designed is not merely to add extra burden to existing overburdened professionals in the present environment of a busy schedule but rather it seeks to enhance their abilities and strive for excellence in the areas due to ever changing scenario of introduction of newer technologies. This in turn would help the ICT competencies to become a part of their professional lives of day-to-day activities, career planning and development. It would also enable productive and effective professional career. The main aim is to guide LIS professionals so that they become more skilled and competent in handling ICT based library services and resources and also identifying gaps in ICT competencies between different levels. The ICTs competency framework is designed in such manner which could entail providing proper guidance and follow up of all LIS professionals in their future endeavours in applicability of ICT in LIS areas.

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