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ICTskillsofLISstudents:AsurveyoftwolibraryschoolsofthePunjab

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Abstract

The study aims at examining the level of ICT skills of LIS students (final year) at the University of the Punjab, Lahore (PU) and the Islamia University of Bahawalpur (IUB). It also finds out the LIS students' satisfaction with the teaching methodologies and ICT facilities provided by their institutes. The study not only identifies the situation of ICT skills of LIS products, but also highlights demands of LIS market in Pakistan. The research design was the surveymethodusing questionnaire. Forin-depth understanding of the phenomenon, semi structured interviews of a purposive sample were also conducted.

Keywords:ICTs;Libraryschools;LISstudents;Punjab

Introduction

TheInformationandcommunicationtechnologies(ICTs)areessential andhave been popularized in the modern world especially inthe industrial societies. Theinvention of ICT has brought a rapid change inall spheresof liferangingfromsocial andpolitical aspectsof aregiontotheworldeconomy. Thefieldof education has no exception (Rekabdarkolaei & Amuei, 2008). Similarly, education is indispensible to influence in development in the key area of ICTs. Since there are potential benefits of ICTs to bring any change in existing structural, social, political, and economic inequities; therefore, by providing the access to ICTs, the individual and collective capabilities of people can be enhanced to better achieve the lifestyle they desire. Thus, ICTs can play a vital role as a means to end, rather than an end itself (Casal, 2007).

To overcome new challenges, all institutions are struggling to improve the quality of teaching and learning through ICTs. As the institutes are aware of the importance of ICTs, they are developing policies to include ICTs in their curricula. Moradi and Khalkhali (2008) concluded that ICT skills were essential for teachers and other staff involved in educational development. ICTs can play a vital role in strengthening the accountability systems. The systems can be improved by tracking the performance of workers, controlling the prices of selling and the budget process can be transparent as the ICTs has made easyand rapid communication of information (Casal, 2007).

Nyamboga (2004) mentioned that now ICT means were also used to enhance the delivery of information services to library users. The libraries can access thousands of e-books, journals, databases and so on. So, ICT is being used to transmit, deliver and/or retrieve information in various formats. He further stressed that to create an informed society, the universities and libraries should be in a position to enable itscommunityto usetheinformationtechnologies in an effectiveway. The universitiesshould offer a credit or non-credit course on library use and information literacy in its curriculum through its library and information science or other departments.

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Many research studies were conducted to find out ICT skills of university students. For example, Hinson and Amidu (2006) found in a study of 400 final year students of business school that most of the university students were aware of the internet and its other applications such as e-mail, searching techniques, databases, etc. Some students felt difficulty in the use of internet; the reason was the lack of access to the internet. It was expected that the level of awareness and use of the internet could be enhanced by providing continued access to it. It was also noticed that the internet as a research and learning tool was used by a few students and they rarely used internet to locate information within limited resources and services like e-mail and www.

Hakkarainen, et al. (2000) stated that ICTs were not intensively used as an integrative part evenin the advanced countries in terms of information technology. The major factor of low intensity of ICT usage was that the computers were usually housed in separate laboratories instead of classrooms where the teaching and learning process happened. The study also suggested that it is necessary to bring the computersinclassroomsandintegrateICT withstudiesof varioussubject domains. Theintegrationof ICT with all areas of curriculum will enforce the students to intensive use of ICT to be a part of information society.

Library and information science (LIS) professionals today need to attain knowledge and skills in ICTsasservicesof most of thelibrariesarenowevolvingaround informationtechnology. Omotoso(2000) categorized IT into storing information, telecommunications technology for transmission of information, and reproduction technology. Information technologies in storage and retrieval are used to bring the academic library service to the users via: a) Computer; b) Internet; c) Electronic mail; d) Telecommunications network; e) Information/computer network; f) Reprographic machine; g) CD-ROM; and h) Telephone, etc. (Enakrire & Baro, 2008).

Keeping this emerging role of ICT in libraries in view, it is vital to prepare LIS graduates for new demanding roles. In this changing scenario, Shafique (2007) has predicted that future librarians would be digital reference librarians, technology experts, navigators, archivists /information specialists, mediators, database developers and cyberspace organizers. Therefore, the LIS students should be prepared for these future roles. Similarly, Gannon-Leary, Banwell and Childs (2001) recommended following skills for LIS professionals:

- ITliteracyskills;basicknowledgeofhowtousecomputers
- Informationsearchingskills;knowledgeoftherangeofEIS(electronicinformationservices) available and the ability to search databases and the internet efficiently and effectively.
- Evaluativeandcriticalskills;tomakeeffectiveuseoftheinformation.
- Information handling skills; to cope with the vast amount of information available, and the rapidchange in sources and services.

Useof ICTs inthelibrariesof Pakistanstartedinthemid-1980s. Therefore, it wasdeterminedthat LIS professionals are now expected to be aware of and capable of using and demonstrating emerging ICTs (Mahmood, 1999). In the wake of these expectations, the Pakistan Library Association (PLA) further stimulated the automation process by conducting a national conference in 1994 with the central theme of “Applicationof informationtechnology.”Theimportanceof thesubject wasfurtheremphasizedby the PLA when its newly elected council declared “Automation of libraries” as the slogan for its 2-years program (Haider, 1998).

Libraryeducationat masterlevel startedin1974at the Universityof thePunjabandin1984at the Islamia University of Bahawalpur. The subjects related to ICTs were not included in the beginning. Due to the struggle of library associations, recommendations were made to revise the syllabus of MLIS. They recommended to the University Grant Commission (now known as Higher Education Commission) that a course on “Information and communication technology” may be included in MLIS syllabus (Rehman, 1992).

Due to the importance of ICTs, this course was included in the curriculum of postgraduate of LIS program. In this course, the major contents like computer basics, application software, operating system, telecommunication & network, databases, etc. were included. The aim of teaching this subject was to enhance the IT skills of the students to cope with the new challenges in the field of librarianship. In Pakistan, library automation was introduced in the 1980s and a number of libraries were computerized during or after 1987. With regard to library automation training, the condition of library schools in the country was disappointing. The University Grants Commission (UGC) presented a revised curriculum in 1991 but unfortunately, no library school implemented it. Another problem was that there were not adequatehardwarefacilitiestotraintheLISstudents.Lateron,theBCCInfaq,anNGO,offeredthesix

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library schools a complete computer lab with 11 IBM PCs and other accessories, which provided a great support in this regard (Mahmood, 1996).

Mahmood and Khan (2007) stressed on the need for continuing professional education and training in various area of ICTs. In a need assessment study for ICT training of LIS professionals, they reported that all the respondents argued that library schools and associations should organizeprofessional meetings, continuing education programs, workshops, etc to enhance the ICT skills of LIS professionals. Students' opinions about all aspects of academic life, especially ICT facilities provided by their schools were also sought out.

As a result ofthiscampaign bylibrary associations andthe academicians, courses oninformation technology and library automation were included in the curriculum of library schools of Pakistan. Application of ICT in libraries of Pakistan has also increased gradually in the recent years, which as a result has provoked the need of rigorous approach in teaching the ICT skills to LIS graduates.

There are eight library schools (public sector) in Pakistan which offer postgraduate courses in library and information science on a regular basis. The Punjab province has four library schools in public sector that are offering LIS education at different levels. Few other library schools are also working in private sector and offering different LIS programs. TheUniversity of the Punjab (PU)has the oldest library school of Asia, which started working as early as 1915. The master's education started here very late in 1974. On the other hand, the library school of the Islamia University of Bahawalpur (IUB) is the second oldest school of the Punjab, established in 1984. The third library school was established at Multan in 2004 but could not continue for more than four years. The fourth library school has been established atthe University of Sargodha in 2008.

The two oldest library schools of the Punjab (i.e., PU and IUB) were selected as a sample for this study. Boththeschoolsarefollowingthesamecurriculumwithslight modifications. Themainobjectivesof this study were the evaluation and comparison of ICT skills of MLIS final year students of PU and IUB,and their satisfaction with lab environment and other facilities related to ICTs provided by their institutes. Moreover, the LIS experts' perceptions were also sought out about the products of both the libraryschools.

Objectives of the Study

Following are the objectives of the study:

1. ToidentifythelevelofICTskillsofLISstudentsofPUandIUB;
2. Toexplorethelevelofstudents'satisfactionwiththeavailabilityofICTfacilitiesatPUandIUB;
3. TofindouttheLISexperts'opinionaboutthecurrentproductsandLISmarketdemandsin Pakistan.

Researchquestionsandmethodology

Thepurposeofthisstudywastoseekanswerstothefollowingresearchquestions:

1. WhatisthelevelofICTskillsofMLISfinalyearstudentsofPUandIUB?
2. Whatisthelevelofstudents'satisfactionregardingtheavailabilityofICTfacilitiesatPUand IUB?
3. WhatisLISprofessionals'opinionaboutthecurrentproductsanddemandsofLISmarketin Pakistan?

Questionnairesurvey

Research design for the study was survey method using questionnaire. On the basis of literature review, a questionnaire containing open and close-ended questions was formulated.The expertvalidityof data collection instrument was established by seeking the opinions of few LIS expertsfrom LISschools of PU and IUB. For data collection, the researchers personally visited both universities. Population of the study was final year (3rd semester) students due to their better exposure to different ICT courses and facilities at both LIS schools. In total, 144 questionnaires were distributed. The response rate was 63.4% from PU and 36.5% from IUB. Data were analyzed by using SPSS software.

Interviews

For in-depthunderstandingofthephenomenonunder study, semi structuredinterviews werealso conducted. For this purpose, ICT concerned teachers at both schools were selected. The researchers interviewed them in their offices. The purpose of qualitative study was to seek detailed answers to the following questions:

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1. WhatisthelevelofICTskillsofMLISfinalyearstudentsofbothschools?
2. When these courses or contents were included in syllabus and what were the objectives to teach these courses or contents?
3. Whatcriteriahavetheteachersadoptedtoevaluatestudents'learning?
4. Areadequatefacilitiesprovidedtothestudents?
5. Havetheymadeanymodificationsinthesystemtoimprovelctskillsofthestudents?
6. Whatarethe problemsinthisregards?

Senior information professionals (i.e. chief librarians of well-known universities, n=4) were also selected for interviews to know their opinions about the current products and demands of the LIS market. The selected interviewees were mostly involved in training of LIS students during students' practicum at their libraries. Moreover, they were among the experts of selection committees of many institutes of the Punjab. The interviews were conducted to seek the answers to following questions:

1. WhatdoyouthinkaboutICTskillsofinterneescomingfromtwolibraryschoolsi.e.PUandIUB?
2. What do you expectabout ICT skillsthey should have learnt before going to practicallife? Do you feel that there is a gap between the learned and required skills of MLIS professionals?
3. Do you think that the syllabi/curricula of both schools should be changed (if yes then which courses/contents should be included)?
4. Whatareyourrecommendationsinthisregard?

Dataanalysisanddiscussion

A seven point Likert-type scale was used in the questionnaire. A limitation of the study is that the students' practices and skills of using ICTs were measured by using their self-assessment. As a consequence, theresultsof thestudydonot necessarilyrepresent theiractual competenceorpracticesof ICT. In order to control the possibility that some of the students might overestimate or underestimate their competence, the investigators included a multiple-choice test in the questionnaire, designed to measure the students' knowledge about some basic concepts of ICT (e.g., operating systems, computer basics, application software, Electronic DDC, MARC, online databases, WWW publishing, online information retrieval etc.).

Personalprofileoftherespondents

The questionnaires were filled by the MLIS final year students of PU and IUB. First section of the questionnaire dealt with personal information about the respondents. Most of the respondents (50.9%) were from the morning sessions. Of 112 respondents, 68.8% were female and 27.7% were male. About88 percent respondents belonged to the age group of 21-26 (see table 1).

Table1.Frequencydistributionofrespondents'personalprofile

Items		Frequency	Percent
University	PU	71	63.4
	IUB	41	36.6
	Total	112	100
Semester	Morning	57	50.9
	Evening	39	34.5
Gender	Female	77	68.8
	Male	31	27.7
Age	21-25	99	88.4
	26-30	7	6.3
	31- 35	-	-
	36andabove	1	0.9

PortfolioofLISstudents'ICTskills

Major partofthe questionnaire was consistedof 37items.The respondents were asked about the level of their ICT skills, level of satisfaction with teaching methodology and ICT facilities provided to them from their institutions.

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Information technology. Both library schools have introduced the course of Information Technology in recent years. The course is being taught in the first semester of MLIS. Different basic ICT related concepts and skills are being taught to the students. The respondents were asked to rate their basic computer skills on a 7-point scale. The results show that the LIS students from PU and IUB had rated their basic computer skills as 'higher' (Mean values are 6.46 and 5.56 respectively). On the other hand, the hardware trouble shooting skill of PU students (Mean= 5.17) was better than IUB students (Mean= 4.25).

Table.2Descriptivestatisticsofstudents'ICTskillsatPUandIUB

Courses	Contents	Mean	
		PU	IUB
InformationTechnology	Computerbasics	6.46	5.56
	Hardwaretroubleshooting	5.17	4.25
	Applicationsoftware:		
	Ms word processor	6.57	5.73
	Mspowerpoint	6.48	5.87
	Mslevelothersheet	6.20	4.88
	Msaccess	5.26	4.31
	Acrobatreader	4.38	3.40
	Acrobatwriter	4.16	3.34
	Operating system:		
	Window xp	5.98	5.34
	Windowserver2003	5.09	4.26
	Linux	3.58	4.11
	Telecommunication and networks:		
	Internet (www, ftp, etc.)	6.46	6.00
	E-mail	6.48	5.45
	HECDatabases	5.68	4.49
	Databases	5.67	4.22
	Chatvoicemail	5.46	4.51
	Videoconferencing	5.27	4.24
	Egroup	5.07	3.69
LibraryAutomation	OPACServices	5.80	5.05
	Onlineresourcesharing	4.92	5.27
	Copycataloguing	4.85	4.97
	Interlibraryloan	4.61	4.59
	Useofcomputerinacquisition	4.45	4.50
	Useofcomputerinserialcontrol	4.20	4.41
	MARC	4.15	5.26
	E-DDC	4.11	3.90
	Developmentofwebsites	3.89	4.63
	UseofLIMS software	3.81	5.29
	UseofKOHA software	3.58	5.82
Online Information Retrieval	Websearchengine(yahoo,Google,etc.)	6.68	6.44
	Booleansearch(AND,OR,NOT)	6.61	5.88
	Othersearchtechniques(i.e.truncation,range,etc.)	6.38	5.24
	Internetsearchingandretrieval	6.24	5.85
	OnlineandCDROMsinformationretrieval	5.86	5.34
	Vocabularycontrol	5.81	5.66
	Onlinedatabases	5.81	5.08
	Indexingandabstractingservices	5.61	4.85
	Naturallanguage	4.98	5.36

Scale:1=Lowest,2=Lower,3=Low,4=Moderate,5=High,6=Higher,7=Highest

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The respondents of PU and IUB were asked about the different operating systems such as Windows XP, Windows Server 2003 and Linux etc. These skills were better in PU students (Mean values 5.98, 5.09, and 3.58 respectively) than IUB students (Mean values 5.34, 4.26, and 4.11 respectively).The students of PU and IUB had higher skills of Internet use (WWW, ftp, etc.), chat, voice mail. However, the students of PU were better in the use of e-mail, HEC databases, online databases, video conferencingand E-groups (see table 2).

Library automation. Library Automation as a subject was introduced in the last decade at both schools. The major contents of this subject are: Use of computer in acquisition, Serials control and other library functions, Inter library loan, OPAC services, Online resource sharing, MARC, Copy cataloging, E-DDC, Web publishing, Use of library softwarelikeLIMS, KOHA, etc. Therespondents fromPU had higher use of OPAC services (Mean=5.80) than IUB students (Mean=5.05). However, the students of both schools had mentioned few library related skills as "high" such as online resource sharing, copycataloging and inter library loan. Similarly, the students of both schools rated themselves as moderate in the use of computers in serials control and E-DDC (Mean values are 4.20, 4.11 and 4.41, 3.90 respectively). The students of IUB were better than PU students in the use of computer acquisition,MARC, website development, use of LIMS and KOHA software (see table 2).

Onlineinformationretrieval.This is anewsubject andit was introducedin2009at bothlibrary schools. The course covers different concepts and skills related to the retrieval of information. The results show that the students of PU had rated their skills as the highest related to web search engines (i.e., Yahoo, Google etc.) and use of Boolean search techniques (Mean=6.68 and 6.61 respectively). On the other hand these skills were rated as higher by the IUB students (Mean=6.44, 5.88 respectively). The students of PU and IUB had higher skills of Internet searching & retrieval, and vocabulary control (Mean values are 6.24, 5.81 and 5.85, 5.66 respectively). The students of PU were better than IUB students in other search techniques (i.e. truncation, range, etc.), online and CD ROM information retrieval, online databases and indexing & abstracting services. While the students of both schools had moderate knowledge of natural languages (see table 2).

Teachingmethodsused

The ICT skills can be taught to LIS students by using different methods of teaching and learning such as Lecture method, Lecture-cum demonstration, Hands on practice,Project method, Assignment method, Instructional method, etc. (Bourner, 1997).

The students of PU and IUB were asked about teaching methods being used by their teachers. The students of MLIS stated that lecture method was used 82.9% in IUB and 60.6% in PU. Assignment method was used 31.0% in PU and 19.5% in IUB. The students were also asked about other teaching methods. These methods were 100% used in PU and less in IUB (see table 3).

Table.3Frequencydistributionofdifferentteachingmethodsusedat PUandIUB

TeachingMethods	PU(N=71)		IUB(N=41)	
	Frequency	Percent	Frequency	Percent
Lecturemethod	43	60.6	34	82.9
Lecture-cumdemonstration	22	31.0	8	19.5
Handsonpractice	71	100.0	13	31.7
Projectmethod	71	100.0	9	22.0
Assignmentmethod	71	100.0	21	51.2
Instructionalmethod	71	100.0	12	29.3

Effectivenessofteachingmethods

The students of IUB argued that the lecture method was highly effective (Mean 4.60) but PU studentsrespondedthat lecturemethodwaseffective(Mean=4.16). Therespondentsof IUBand PUwere asked about the other teaching methods such as lecture cum demonstration, hands on practice and assignment method and they said that these are effective for teaching (Mean values are 3.62, 4.05, 3.78 and 3.71, 4.17, 3.95 respectively). The students of PU mentioned that project and instructional methods were effective (Mean values are 3.93 and 4.19 respectively), however, IUB students did not give any opinion about these methods (Mean values are 3.33 and 3.49 respectively) (see table 4).

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SatisfactionwithICTfacilities

The students of PU and IUB were satisfied with internet availability provided by their institutes (Mean values are 3.91 and 3.51 respectively). On the other hand, the students of PU were more satisfied with ICT facilities such as availability of multimedia, access to digital databases, lab furniture, internet speedandlabenvironment(Meanvaluesare3.90,3.76,3.60,3.57and3.54respectively)thanIUB students (Mean values are 2.89, 2.85, 3.47, 3.21 and 3.28 respectively). The IUB students were more satisfied with behavior of lab staff (Mean=3.55) than PU students (Mean=3.39). The respondents of PU were more satisfied with overall quality of lab services (Mean=3.52) than IUB respondents (Mean=3.26) (see table 5).

Table4.Descriptivestatisticsofstudents'opinionabouteffectivenessofteachingmethods

Methods	**Mean**	
	PU	**IUB**
Lecturemethod	4.16	4.69
Lecturecumdemonstration	3.71	3.62
Handsonpractice	4.17	4.05
Projectmethod	3.93	3.33
Assignmentmethod	3.95	3.78
Instructionalmethod	4.19	3.49

Scale: 5= Highly effective, 4=Effective, 3= Neutral, 2= Non-effective, 1= Highly non-effective

Table. 5Descriptivestatisticsof respondents'satisfactionwithICTsfacilitiesattheirdepartments

Statements	**Mean**	
	PU	**IUB**
Internetavailability	3.91	3.51
Availabilityofmultimedia	3.90	2.89
Accesstodigitaldatabases	3.76	2.85
Furnitureprovidedinlab	3.60	3.47
Internetspeed	3.57	3.21
Labenvironment	3.54	3.28
Applicationsoftwareavailability	3.48	3.23
Computerspeed	3.43	3.21
Computerfunctionalityandreliability	3.41	3.13
Behavioroflabstaff	3.39	3.55
Rangeofcoursesdepthofcontents	3.39	3.19
Numberofcomputers	3.23	3.33
Labhoursforpractice	3.09	3.21
Overall satisfaction: Iamsatisfiedwithoverallqualityoflabservices	3.52	3.26

Scale:5=HighlySatisfied,4=Satisfied,3=Neutral,2=Dissatisfied,1=HighlyDissatisfied

Qualitativedataanalysis

To answer the research questions, analysis of the data was accomplished in different steps. Inthe first step, ICT-related background, characteristics and level of ICT skills of MLIS final year students of PU and IUB were compared. To fill up the gaps in the quantitative data, interviews of teachers were also conducted from both schools. Their opinions, comments and recommendations were collected and analyzed rationally and presented in words, and sentences, etc.

One representative faculty member from each department was interviewed for this study. Both representatives were teaching ICT related courses at their respective LIS schools. Through interviews, detailed data were gathered, analyzed and presented here.

Teachers'opinionaboutICTskillsofMLISfinalyearstudents

The MLIS final year students have good ICT skills as compared to first year students (n=2). The final year students have better skills because they have learnt a variety of topics and contents related to ICTs in the previous semesters (n=2). Good ICT skills depend on practice, availability of information technologiesandthestudents'interest(n=2).Theyhavelearnthowtoautomatealibrary,howtouse

library databases and software. Ninety percent students have good IT skills, only a few students are less skilled due to these reasons: some students are naturally dull and lazy, some have not financially strongto purchase the latest technologies for home practice; however, those students have the basic knowledge of ICTs (n=1).

ReasonsofincludingnewICTcontents/coursesintheLIScurriculum

Presentlyfour ICT related courses are being offered atMLISlevel (n=2). The contents included in these courses are: Application software (MS Word, MS Excel, MS Power Point, etc.), Operating systems (Linux, Window XP, etc.), Telecommunication & networks (Internet(www & ftp, etc), E-mail, etc.), Databases, Library software (KOHA, LIMS, etc.), Library automation (OPACs services, MARC, E-DDC, Development of websites, etc.), Online information retrieval (Boolean search), Vocabulary control, Online & CD-ROM information retrieval, Indexing & abstracting services, etc) (n=2). In the beginning, one ICT related course was offered for the students of last semester as an optional subject in 2004 (n=1). Due toits importance, all the students showed their interest and selected this subject (n=1). So, it was felt by the LIS experts that more ICT skills were required in the profession and the emphasis by market also caused to include more ICT related courses and contents in the syllabus (n=1).

Evaluationcriteriaofstudents'ICTskills

ICT skills of the students are evaluated by different ways such as: Surprise tests, quizzes on regular intervals, questions are posed during class sessions, hands on practice is also conducted by the students and final exams are taken for the evaluation of their skills at the end of every semester (n=2). Individual and group presentations are assigned to the students (n=2) and they are asked to use the multimedia for presentations randomly (n=1). The students are also assigned to develop a website, database development, etc. (n=1). The ICT skills of students are evaluated day to day (n=1).

ICTfacilitiesprovidedtothestudents

ThestatusofPU.Thereare30computersintheDepartmentalLabandLibrary,allarenetworked, two multimedia, one printer (only for research students) and one scanner is available at the LIS Department. The strength of students in LIS Dept. is about 90, so the quantity of PCs and other technologies are not sufficient for practice by every student.

The status of IUB. There are only four PCs, one scanner and one printer (only for teachers) availableintheLISdepartment. Thestrengthof studentsisproximately90andtheICT facilitiesprovideto the students are not adequate. There is a common lab for Arts Faculty and the teachers of ICT have touse that very busy lab to deliver their IT related lectures. Similarly, the students also have to use this lab for practice. The students and the teachers have to face a lot of problems in this regard, such as, thelabis not available to the students for practice all the time, as it is also used by other departments of the Arts Faculty. Moreover, library software (i.e., Koha, E-DDC etc) are not installed in the lab and the teachersand students have to wait for installation.

Problemsandsuggestionsforimprovement.Boththeteachersmentionedthatthestudentsand theteachershavetofaceavarietyof problemsregardingICT facilitieslikeelectricityproblem,shortageof computers and other technologies etc. Lab timings create problems for students especially for evening students (n=1). Some students cannot learn new skills naturally and some students do jobs during their studies, so, they cannot give the proper attention to their study and practice but these problems may be controlled by teaching gradually (n=1). There is no separate departmental lab at IUB, so, the students cannot practice properly. Moreover, all the students do not have PCs at their homes (n=1).

Moreover,both the teachers mentioned thatthe trial-versions ofsoftware are being installed atboth the institutional labs (PU and IUB) which create problems most of the time. They recommended that thelibraryschoolsshouldpurchasenewsoftwareandincreasethequantityofPCsandotherrelated facilities to enhance ICT skills of their students. Moreover, licensed software should be purchased (n=2). They also stressed that the students should focus more on practice to enhance their ICT skills (n=2). For thispurposetheassignmentsondifferenttopicsmaybeassignedandreceivedbye-mailandthe studentsshouldbeaskedforclasspresentationsthroughmultimedia(n=1).Theteachersandthe studentsofIUBhavetousethecommonLabofArtsFaculty,soanindependentcomputerlabwith adequatefacilitiesmustbedevelopedatLISDepartmentofIUB(n=1).Thereisneedtoimprovethe

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infrastructureandenvironmentofDepartmentalLabofPU(n=1);thenumberofPCs,multimedia,scanners, etc. should be increased and the number of teachers must also be increased (n=1).

Interviewswithinformationprofessionals

Some senior information professionals (i.e. chief librarians of different large libraries; n=4)) were also interviewed to know detailed information about current situation and future market demand for LIS professionals.

OpinionaboutICTsskillsofinterneescomingfromtwolibraryschools

The students who belong to big cities are better in ICT skills rather than those students who belong to rural areas (n=4). Anyhow, the internees/students coming from PU are better in ICT skills as compared to the students coming from IUB (n=3) except few exceptional cases (n=2). There is a difference between the attitude, aptitude and skills of each student (n=1) but the students of science have more skills in ICTs as compared to humanities or arts students (n=1). Some students of PU do not have the basic knowledge of computer, searching techniques, terminology that are used in digital libraries(n=1). The libraries of Bahawalpur are working in traditional environment and there is no automated system in libraries, so the students do not learn ICT skills much attentively (n=1). The students of IUB have less ICT skills due to unavailability of computer labs and other facilities (n=1).

Needed/expectedICTskillsofstudentsbeforejoiningthepracticallife

The LIS students should have the basic theoretical knowledge of computer, its components and the use of email, internet and web applications especially the use of electronic resources, searching information from different databases. They should also have the knowledge about different librarysoftware modules (n=4), students should also have the knowledge of Microsoft Office tools (n=3), and hands on practice regarding development of databases and websites, and use of social networking tools to provide good services to their clients (n=1).

GapbetweenthelearnedandrequiredskillsofMLISprofessionals

There is a big gap between the learned and required skills of MLIS professionals (n=4) due to insufficient availability of hardware and software; deficiencies in the Internet access, and ICT infrastructure; LIS faculty's skills; and the background of students (n=2). The library schools are not preparing their students according to the market demands (n=2). Furthermore, when library schools recommend the students for internship to different libraries, they provide no guidelines to chief librarians about what library operations and ICT skills should be learnt by the students (n=1). Moreover, during the practicum no teacher or head of the department discusses with chief librarians about internees' learning progress, their ICT skills, and other related problems (n=1).

OpinionaboutLISsyllabi/curriculaoflibraryschools

The syllabi/curricula of both schools is good but the implementation of HEC approved courses, expertiseanddedicationof theconcernedfacultyisrequired(n=3). Theteacherswhoarewell-trainedand have good ICT skills can teach their students in a better way (n=3). There should be collaboration among teachers of all library schools (n=2) and they should be exchanged among different schools for teaching purposes (n=1). There is very fast change in ICT equipments and ICT systems, tools and techniques, so the courses should also be changed with the same speed (n=1).

SuggestionsfortheimprovementofLISproduct

All library schools should improve their IT infrastructure and ICT facilities (n=4). Training programs, meetings and workshops should be arranged for teachers to improve their ICT skills (n=3). Faculty should deliver contents with letter and spirit (n=2). They should arrange library visits for students during their study (n=1). Heads of library schools should prepare a parameter, what the students should learn during their practicum and there should be a check and balance mechanism for internees as well (n=1). The teachers should contact the chief librarians regarding internees' problems and learning progress (n=1).

Conclusionandrecommendations

The descriptive statistics show a difference between the level of ICT skills of LIS students of PU andIUB.Italsodepictstheirlevelofsatisfactionwith ICTfacilitiesprovidedbytheirrespectiveinstitutes.

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Thestudy foundthat theLISstudentsof PUwere slightlybetterinICT skillsascomparedtoIUBstudents. Similarly, the students of PU were more satisfied with lab environment and other ICT facilitiesprovided by their institute than IUB students. The major reasons of this difference were insufficient availability of ICT facilities such as hardware, software and the internet bandwidth, inadequate IT infrastructure, etc. Moreover, the students fromurban areas depicted better ICT skillsthan students who belonged to rural or far-flung areas. It is also important to note that most of the students coming at IUB belong to rural areas, so they have low ICT aptitude. Another advantage, which goes to PU that it is the oldest university of the sub-continent and as a resulthas better ICT infrastructures and other facilities than IUB. This is the reason that Department of Library and Information Science, IUB has no separate computer lab for students and they have to use the common computer lab of Arts Faculty. Due to a shared lab, thestudents and teachers of IUB face difficulty in teaching the ICT related courses. On the other hand, Department of Library and Information Science, PU has its own well-equipped lab, where students get enough opportunity for hands-on-practice.

Interviews with information professionals/experts disclosed that the LIS students of theuniversities were not well equipped with modern ICT skills. They argued that the syllabus/course of both the LIS schools was quite good and up-to-date; however, the students had less opportunity of hands-on- practice. Therefore, the required ICT skills could not be developed in the students. The interviewees stressedonthemanagement of boththelibraryschoolstoimprovetheirIT infrastructure, provideeffective teaching environment, and ICT facilities to LIS students to bridge the gap. These findings also correlate with the recent findings by Mahmood and Shafique (2012); their study respondents (LIS Alumni, PU) suggested that IT and communication skills (written and oral) of students should be improved and teachers' training should be a regular component along with the revision of the curriculum.

Followingrecommendationsarefurnishedbasedonthefindingsofthestudy:

- IT infrastructure of all library schools should be improved. All library schools should maintain their departmental labs and should increase ICT facilities (number of computers, printers, scanners, multimedia, access points, etc.) for their graduates.
- Teachers of all library schools should deliver the course contents with letter and spirit and there should be a faculty exchange program at LIS schools for learning from each other's experiences.
- Number of faculty members of all library schools should be increased and they should beprovided with the opportunitiesfor enhancing their ICT skills. Local and foreign training programs, meetings, seminars, workshops and video conferences should be arranged for this purpose.
- Aparameterforinternees/studentsshouldbedevelopedbytheheadsof libraryschools(i.e., what types of skills should be learnt by the students during their practicum). Moreover, internal and external supervisors should regularly check the students' progress by having scheduled meetings during the practicum period.
- Teachers should pay more attention on personality development, class participation, book reviewing and presentation skills of the students, so they may become good presenters, book reviewers in this modern and public relation era. Visits to different technologically advanced libraries should also be a regular part of the LIS studies.

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