FACULTY'S PERCEPTION ABOUT TECHNOLOGICAL COMPETENCIES IN LIBRARY AND INFORMATION SCIENCE PROFESSION: AN ASSESSMENT

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Abstract ***Purpose*** *– The aim of the present study is to know the perception of the library and information science (LIS) teachers in Northern India about the technological competencies in the field of LIS Profession.*

Design/Methodology/Approach– *A questionnaire designed for this purpose is based on the competencies identified by an extensive review of literature available on the theme. Information technology related competencies are divided into two broader categories viz., ICT general competencies and Library related ICT competencies. While the former category includes thirteen elements like "Information Technology: Basics,"Internet: Basic Features and Tools","Web 2.0 and related technologies, "Networking", "Web designing", "Interoperability" etc. Later category comprises of six elements including "Library Software Package", "Library Automation.-Basics", "Open Source Software", "RFID and related Technologies","Database Management Systems", and "Webometrics". A questionnaire regarding these competencies was framed and distributed among the LIS faculty working in different universities in India.*

Findings– *Main findings of the study indicate that there is difference in the perception level among the faculty members of LIS discipline towards the enumerated information and technology competency elements. However, majority of the respondents feel that these elements of technological competencies should be incorporated in the LIS curriculum.*

Research Limitation: *Present study is limited to only the faculty members concerned with the teaching. Study can be more fruitful if the practitioners view is also taken into consideration.*

Originality/Value– *This perception will lead to the formulation of a curriculum in the technological facet of LIS discipline that will help to produce competent professionals equipped with technological competencies.*

Keyword: *Library science, Information science, Competencies, Technological competency, Faculty Perception Paper*

INTRODUCTION

Library and information science profession is concerned with providing effective and efficient information services to the users of information. Providing pinpointed, exhaustive and expeditious information to the users is the mission of librarianship. However, this mission is achieved only when the LIS professionals are well equipped with the competencies essential for performing the basic activities in libraries viz., acquisition of information sources, organization of information sources, preservation of information sources and dissemination of information. Thus competencies form the foundations for a sound professional. As a concept competencies are combination of skills, knowledge and behaviors important for organizational success, personal performance and career development. A competence is a bundle of skills and technologies rather than a single discrete skill or technology to function in a particular way. However, competencies once defined cannot be taken as either universal or immutable. These are constantly evolving in order to remain relevant and their application is dependent on the context in which they are applied.

The greatest challenge for the LIS professionals has been the technology–driven information industry where technology is applied in generation, processing, preservation, dissemination, delivery and all related activities in the field of information. New technologies are playing a central and key role in the emergence of a range of mechanisms with a wider range of labels that include digital libraries, institutional repositories, open archives, knowledge management systems, learning resource centers etc. The internet and cutting-edge information technology have become a major force in changing the information landscape of LIS profession. LIS professionals need technical proficiency in order to operate successfully in the knowledge age.From the very beginning Library and Information Science (LIS) is concerned with developing competencies among the practitioners so that they are competent enough to perform

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their professional activities in order to achieve the mission of libraries and information centers. This mission is to bring right information recorded in whatever form and format to those who are in need of that information at the right time.

AIMS AND OBJECTIVES

Technological competencies have gained importance in the profession of library and information science. As LIS schools are engaged in creating human resources for managing different library and information centers, it is essential that faculty in these schools must be well versed about the technological developments occurring in the profession. These well versed teachers can serve as real mentors for the budding professionals. Only competent faculty can bring revolutionary changes for improving the quality of education in the profession.Present study is focused on knowing the perception level of faculty members in Indian LIS schools about the technological competencies. For conducting present study eight (8) elements of competencies related to technology were identified and enumerated in the questionnaire. Faculty members were asked to rate their importance in LIS profession on a four point scale with choices of "extremely important", "very important", "important", or "not important".Questionnaire was distributed among hundred faculty members of different LIS departments in India. Fifty questionnaires were received thus the response rate is 50%. Data collected from faculty is analyzed statistically and findings achieved are presented in the proceeding sections.This perception will lead to the formulation of curriculum in the core area of technology applications in library and information centers.

REVIEW OF LITERATURE

There is a global surge of interest in competencies. Different institutions and organizations at the governmental, nongovernmental and intergovernmental levels have framed different sets of competencies in order to become successful e.g. United Nations Organization (UNO), United Nations Industrial Development Organizations (UNIDO), Special Library Association (SLA), American Library Association (ALA), Chartered Institute of Library and Information professionals (CILIP) etc have framed competency statements. Gorman and Corbet (2003) are of the view that without clear guidelines on competencies, a profession is likely to get lost when marching toward an increasingly dynamic future. The authorshad devised a set of four areas that encompass the basic knowledge base of present-day library science professionals: client needs and services, management of people and resources, technology utilization, organization of knowledge. In Malaysia a study was conducted by Sajjad, AbuBakerandShaheen (1993) to validate competencies by using a scale indicative of the perceived extent of importance of each competency. Fifty top and middle managers of the ten largest special libraries in Malaysia were interviewed. The validated competencies were presented undersix areas: foundation, cataloguing, circulation, information service, collection development and serial control. Authors were of the opinion that capabilities to relate information to the organizational mission and profile, managerial competence, effective exploitation of information technology, subject expertise, and a great deal of emphasis on service aspect figure as the most important arsenal for the future information professionals. Buttler and Mont (1996) identifiedknowledge of basic reference sources, collection management and conducting a reference interview as essential competencies of professionals. Ustun (2002) is of the opinion that changes occurring in the information landscape have compelled libraries and information institution to bring changes in their physiological, functional and organizational structures. Author is of the view that information professionals are supposed to gain new knowledge and skills for progressing in the direction of professional development. Mayer (1997) argue that librarians who were once book buyers, cataloguers and reference searchers have become network managers, database integrators, fuzzy logic applicators, artificial intelligence experts and graphical interface designers. These changed roles demand that the competencies of the professionals must be developed keeping in view the emerging landscape of the information environment.In such an environment the skill of creating a meaningful metadata file can help the users to find needles in the internet haystack. These observations are supported by other studies. (Abu Baker, 2005; Ashcroft & Watts, 2004;Plosker, 2003;Vibhuti, 2002; Saracevic&Marijia, 2001;Sharp, 2000). In the prevailing digital era, libraries are moving towards complete digitization and this environment has posed multiple challenges in front of the library professional community. Emergence of World Wide Web demand that library profession and professionals must revisit its knowledge base in order to survive in the web environment. Demand of the day is that Professional must establish relationship with internet and World Wide Web. (Ashcroft & Watts, 2004;Plosker, 2003;Vibhuti, 2002).Paul & Damian(2010) carried out a survey to investigate which skills library managers think their staff should possess as their organizational culture alters to meet the demands of a changing internal and external environment and user needs. The survey contains 20 broad categories of skills listed under five main areas. Findings of the survey revealed that of the library managers, 64 % strongly agreed that finding and using print and online resources was an important skill to possess; 93% agree that library staff should maintain a healthy work-life balance; and 79% agreed that staff should understand the performance standards relating to their position. The nature of what is taught in each discipline reflects what the respective professions require of their members. In the opinion of

Gorman and Corbet (2003) competencies are an essential component in understanding the evolution of a profession and, educationally, in developing responsible professional education programmes. Elaborating further they believe that as educators, they are of opinion that competencies provide an objective framework for the design and validation of professional education programmes. Ordiri (1999) recognize the need for designing an appropriate curriculum in LIS schools to produce graduates with the right skills for a rapidly changing information environment and observes that the curriculum should try to develop attitudes rather than to drill in the techniques. In this backdrop, present study is an attempt to get some idea from the LIS educators in India about the emerging competencies so that curriculum of LIS schools can be reshaped and restructured according to the emerging trends in the information landscape. It is only then that LIS schools are able to produce professionals who are capable and competent enough to perform their professional obligations in a professional manner.

DATA ANALYSIS

Data collected from the respondents were incorporated into a SPSS statistical software file. The data were then analyzed using frequencies, percentages, means and standard deviations. Findings from the analyzed data are presented underdifferent headings.

Table 1. ICT Competencies (General)

Rank	Information & Communication Technology Competency Elements	Responses				Mean Scores
		Not Important	Important to some Extent	VeryImportant	Extremely Important	
1	Internet: Basic features and tools	0	1 (2)	7 (14)	42 (84)	3.82
2	Information Technology: Basics	0	0	15 (30)	35 (70)	3.7
3	Web 2.0 and related technologies	0	11 (22)	17 (34)	22 (44)	3.22
4-5	Networking	3 (6)	6 (12)	24 (48)	17 (34)	3.1
4-5	Operating Systems	3 (6)	10 (20)	21 (42)	16 (32)	3.1
6	Web designing	3 (6)	8 (16)	20 (40)	19 (38)	3
7	Interoperability	2 (4)	17 (34)	22 (44)	9 (18)	2.76
8	Firewalls	6 (12)	20 (40)	17 (34)	7 (14)	2.5
9	Flowcharting	6 (12)	19 (38)	21 (42)	4 (8)	2.46
10	Markup language	6 (12)	22 (44)	20 (40)	2 (4)	2.36
11	Programming	11 (22)	20 (40)	13 (26)	6 (12)	2.08
12	Artificial intelligence (AI)	12 (24)	28 (56)	7 (14)	3 (6)	2.04
13	Algorithms	14 (28)	22 (44)	12 (24)	2 (4)	2.02

Note: *Data in parenthesis indicate percentage of respondents*

Table 2. Library related ICT Competencies

S.No.	Library related ICT Competency Elements	Responses				Mean Scores
		Not Important	Important to some Extent	VeryImportant	Extremely Important	
1	Library Software Packages	0	0	10 (20)	40 (80)	3.8
2	Library Automation-Basics	0	0	16 (32)	34 (68)	3.68
3	Open Source Software	0	1 (2)	15 (30)	34 (68)	3.66
4	RFID and related Technologies	0	9 (18)	17 (34)	24 (48)	3.3
5	Webometrics	3 (6)	14 (28)	24 (48)	9 (18)	2.78
6	Database Management Systems	3 (6)	8 (16)	28 (56)	11 (22)	2.74

Note*: Data in parenthesis indicate percentage of respondents*

Information & Communication TechnologyCompetencies (General)

The greatest challenge for the LIS professionals has been the technology–driven information industry where technology is applied in generation, processing, preservation, dissemination, delivery and all related activities in the field of information. New technologies are playing a central and key role in the emergence of a range of mechanisms with a wider range of labels that include digital libraries, institutional repositories, open archives, knowledge management systems, learning resource centers etc. The internet and cutting-edge information technology have become a major force in changing the information landscape of LIS profession. LIS professionals need technical proficiency in order to operate successfully in the knowledge age. For the present study thirteen competency elements related to general elements of information and communication technology (ICT) are included. Data collected indicate that there is difference in perception of LIS faculty members about the importance of ICT competencies in the profession of library and information Science (Table 1). About "*Internet: Basic Features and Tools"* majority of respondents (84%) view it as extremely important and 14% feel it is very important. Majority of the respondents perceive *"Information Technology: Basics, (*70%)", *"Web 2.0 and related technologies, (44%)",* "*Networking, (48%)"*as extremely important. Majority of the respondents view *"Operating Systems* (42%)", *"Web designing* (40%)", *"Interoperability* (44%)", and "*Flowcharting,* (42%)" as very important. Majority of respondents perceive *"Firewalls*, 40%", "Markup language, (44%)", "Programming, (40%)", *"Algorithms*, (44%)" and "Artificial Intelligence, (56%)" like competencies as least important for LIS professionals. A number of respondents regard "Firewalls" (12%), "Flowcharting" (42%), "Markup language" (12%),"Programming" (22%), "Algorithms" (28%) and "Artificial Intelligence" (24%) as not important in LIS profession. On further analysis of data, mean scores were calculated and on the basis of mean scores competency elements are arranged in descending order (Table 1). Of 13 competencies belonging to General ICT category "*Internet: Basic features and Tools"* has got the highest mean score (3.82) and is at the first rank. *Algorithms*with mean scores of 2.02 are at the lowest rank among the ICT Competency (General) category.

Library related ICT Competencies

The greatest challenge for the LIS professionals has been the technology–driven information industry where technology is applied in generation, processing, preservation, dissemination, delivery and all related activities in the field of information. New technologies are playing a central and key role in the emergence of a range of mechanisms with a wider range of labels that include digital libraries, institutional repositories, open archives, knowledge management systems, learning resource centers etc. The internet and cutting-edge information technology have become a major force in changing the information landscape of LIS profession. LIS professionals need technical proficiency in order to operate successfully in the knowledge age. For the present study , there are six competency elements in this category. How much faculty is aware about the importance of these competencies is shown in table 2.

Data collected reveals that there is difference in the perception of LIS faculty members about the importance of these competencies (Table 2). About "*Library Software Package"* majority of respondents (80%) have perception that it is extremely important. Similarly majority of the respondents perceive *"Library Automation.-Basics, (68*%)", "*Open Source Software*, *(68%)"* and"*RFID and related Technologies, (48%)"*as extremely important. Majority of respondents perceive *"Database Management Systems*, (58%)", and "*Webometrics,* (48%)" as very important competencies for LIS Profession. On further analysis of data, mean scores were calculated.All elements are arranged in descending order on the basis of achieved mean scores (Table 2). From the mean scores, it is evident that "*Library Software Package"* with mean score 3.8 is at the top most rank and competency related to "*Database Management Systems*" with mean score 2.74 is at the lowest rank. These findings reveal that information and communication technology is considered indispensable for Library and Information Science Professionals, as respondents gave a high priority to competencies related to information and communication technology. This is a more general and universal trend and librarianship in India is not an exception to it.

DISCUSSION

Competencies form the backbone of the library and information science profession. Due to the impact of information and communication technologies almost all the facets of LIS profession are now carried out with the aid of technology. Whether it is the case of selection of information sources or is the organization of these sources technological aspect can not be ignored. Technological aspect of preservation has gained importance in the contemporary digital environment. Services provided by the libraries and information centers are also being delivered now with the aid of technology. Thus, we find that all the four pillars of the LIS profession viz., acquisition; organization, preservation and dissemination of information are performed by library professionals with the aid of technology. Findings from the present study confirm that majority of the teachers who are concerned with the teaching in the LIS departments have fully realized the importance of information and communication technology. However, some teachers are not well aware about these technologies and thus it is the need of the hour that programmes must be conducted in order to give full exposure to such teachers about the application of ICT in libraries and information centers. Teachers in LIS can upgrade their knowledge about emerging technologies through attending seminars, conferences, workshops or by reading journal articles and by contributing articles about different facets of ICT.

CONCLUSION

Libraries and information centers are utilizing ICT for providing pinpointed, exhaustive and expeditious information to their customers in an effective and efficient manner. Technologies are being put to use by the human beings. To what extent ICT in libraries will be used depends upon the professional librarians using these technologies. Availability of competent professionals has posed a challenge to schools / departments imparting education for producing professionals who are able to face the ICT music in libraries. Thus, we find that ICT has become an essential component in the LIS curriculum. Teaching Information technology facet in LIS schools depends upon the availability of competent teachers. Teachers who are themselves well aware about the application of information technology can motivate and generate interest among his students to learn the IT component with great zeal and enthusiasm. Findings from this study reveal that LIS faculty must take all appropriate measures to keep themselves up-to- date about the latest developments in the technology facet of librarianship.

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