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Course Choice and Equipage of Professionals Implications for Re-structuring LIS Programmes in Developing Countries with special reference to India

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Abstract

Library and Information Science (LIS) education has become increasingly challenging in the context of emerging information communication technologies and competitive with the frontier subjects like computer science, mass communication, management studies etc. The schools of information science and library studies across the world have to compete for students in the recruitment market. The study upon which this paper is based is aimed at finding out the profile of students joining the LIS programme in India and the influence factors the students consider important in their choice of course of study. The study is also aimed at assessing the adequacy of the course content and training being imparted in the current LIS programmes for managing the modern Library and Information Centres in India and for meeting the professional challenges ahead.

Two hundred students of Bachelors and Masters in Library and Information Science from the schools and colleges of three universities and the working librarians of college and university libraries in Kerala (India) participated in this study. The study involved two survey questionnaires.

The study may help the higher education institutions in India to recognize the urgency for restructuring the LIS course content and to offer necessary Career Improvement Programmes (CIP) to fill the gap between the current LIS programmes and the skills required for the modern LICs, and thereby to attract the motivated and the best students to the LIS programmes in India.

Keywords: Library Science Education, Recruitment, Course Content, Job Market

Paper type: Research paper.

Introduction

The higher education environments in most of the developing countries have become competitive and institutions increasingly have to compete for students in the recruitment markets (James, Baldwin & McInnes, 1999). A useful way to gain understanding of these recruitment markets is to have a clear grasp of the choice and decision making processes of intending applicants. This paper aims to identify the factors that influence the students to choose the library and information science (LIS) course in higher educational institutions in India and to assess the adequacy of the course content and training being imparted in the current LIS programmes for managing the modern library and information centres and for meeting the professional challenges ahead.

These are vital information for restructuring the LIS programme in an increasingly competitive higher education environment in developing countries especially in the context of emerging information communication technologies (ICT). The paper begins with a brief reflection of the impact of emerging ICT on library and information profession, and summarises the developments in LIS across the world with a special reference to the developing countries like India. It then describes the methods used to collect and analyse the data, the findings of the study followed by a discussion of implications at restructuring LIS programmes seeking to position themselves securely in the highly competitive markets of higher education.

Impact of ICT

The influence of ICT on every discourse of human knowledge is undisputed and is also considered all pervasive. LIS is not an exception, but a profession in search of identity imbibed a friendly internship with technology or mechanization since the late nineteenth century.

The library profession has undergone numerous transformations in the last quarter century, primarily due to technological developments; mainly the emergence of the personal computer (PC), electronic databases, electronic data retrieval methods and the global information network the Internet. The assimilation of these tools in libraries created the need for evaluative study of their use and appropriate modifications of professional activities in libraries. (Baruchson-Arbib and Mendelovitz, 2004)

LIS Schools in response to these changes have often revised their curricula, offered new study tracks and they gradually changed even the name of the profession from librarianship to information science and information management. Also, the librarian became known as the information scientist, information professional or information specialist. (Baruchson-Arbib and Mendelovitz, 2004). These were more than merely semantic changes, and reflect a substantial transition in orientation from the organization and use of print materials to an engagement with a multidimensional, boundary-less digital space in which no conventional rules of preservation, organization and reference existed. (Baruchson-Arbib and Mendelovitz, 2004).

In some instances the change has been largely cosmetic, but in others it has been more dramatic. We all know about the rampant library school closures in the USA some years ago and there have been similar closures and amalgamations (Gorman, 1999). This is one extreme. The library schools in many Western countries moved so far away from teaching librarianship in a form needed by employers, with the result that they were attracting fewer and fewer students. Back in 1990 Michael Gorman lamented the drift of library school away from librarianship when he wrote:

now that many of the schools have abandoned all but the most cursory attempts to educate librarians (as opposed to 'information scientists'), libraries are increasingly having to train and educate their new professional staff. This imposes strain, increases tensions, and exacerbates generational differences (Gorman, 1990, p.463).

Today librarianship has turned out to be a multi convergent profession, yet its search for identity still pursues. In this context, to structure a truly dynamic curriculum for manpower development is truly a complex task. It is observed that all over the world, a serious exercise to review the status of LIS education is on the anvil for over the last two decades due to the impact of information technology and with the emergence of information society (Karisidappa, 2004). Today ICT has become essential knowledge for the sustainable development of a nation and more so of the developing countries like India (Asundi and Karisidappa, 2001).

A new model curriculum integrating the traditional and modern knowledge and thought has to be devised and implemented. Despite overall progress achieved by developed nations they are often undergoing brainstorming sessions to evolve new

competencies for the information professionals. The Special Library Association has published in 2003 a revised edition of the Competencies for the Information Professionals of the 21st Century (Clive, 2003).

In the western countries many LIS schools have made a thorough revision and development of course programmes and also introduced new courses to meet the needs of employers in industries, and the public and private sectors. The introduction of new programmes should therefore be seen to some extent as reflecting the 'Pull-Push Effect' of recognizing the increasing need for the professional workforce to match the growth and significance of information industry and the expanding higher education system to provide the appropriate workforce (Karisidappa, 2004).

LIS in Developing Countries

A countrywide exercise was made in India to articulate the knowledge (theory, skills, and practice), which could be packed in the LIS Education and Training Curriculum. The well defined modules prepared by the expert committee were presented before the forum of chairpersons of Boards of Studies of LIS of different universities. This has enabled them to develop a viable curriculum after debate, finding a balance between the traditional and modern practices, skills and techniques (UGC, 2001). The changes in fact symbolize the search for identity of this profession, rooted in both practice and theory, which has recently embraced elements from the world of information communication technology.

The Schools of LIS all over the world are faced with difficult questions concerning the future of the profession, its new attributes, the most appropriate training for professional development and the very definition of the profession itself. (Baruchson-Arbib and Mendelovitz, 2004). A process such as this is not exceptional in the world of academics. After many generations in which a conventional set of subjects were taught in universities, such as philosophy, law, medicine, languages and science, many new subjects have emerged on the scene, including business administration, accounting, biotechnology, genetics, as well as socially-oriented subjects such as psychology, criminology and social work. These new subjects underwent a similar process of re-orientation to define and refine their emerging theoretical and practical foundations. In

fact, these are still evolving on the basis of recent research publications. In the twentieth century, subjects such as business administration or social work, which, like librarianship, have been identified as practical professions, have gained recognition as academic subjects with a solid theoretical foundation. (Baruchson-Arbib, S and Mendelovitz, S, 2004).

In the light of the current re-definition and consolidation of LIS studies, one obvious factor affecting the profession's formative development in the future are the graduates who practice the profession in various work settings in libraries, and in information centres in the private and public sector, and shape their practice on the basis of their job perceptions and expectations. In this cyclic process involving schools of LIS, students and market forces ultimately shape the profession, which will either gain recognition as the modern substitute for traditional librarianship, or alternatively, evolve as a separate profession existing alongside librarianship. It is therefore appropriate to investigate how students of LIS respond to this change, specifically their awareness of the profession and their comparative status perceptions of the LIS profession and their personal preference of becoming or working as librarians or information scientists. Accordingly, the present study was designed and conducted on a sample population of students of LIS schools and librarians in India. India being a developing country it is assumed that the implications of the findings of this study will be effective for other developing countries too. Hence the title implies a wider reach covering the developing countries.

Design and Methodology

Aim and objectives of the research

The overall aim of this study is to explore the factors which the students in developing countries, particularly in India considered influencing the choice of LIS course and to assess the adequacy of the course content offered in LIS schools for the effective equipage of the professionals. In order to operationalise this broad aim, the study identified the following key objectives:

- To rank the relative importance of the factors influencing the choice of LIS course by the students in developing countries.
- To assess the adequacy of the content of LIS programme offered in the higher education institutions in developing countries.

Research population and sample

There were a total number of 140 students studying LIS programmes at bachelors and masters levels in the three universities surveyed. Of these, 100 students with a break up of 72 female students and 28 male students responded to the survey. Thus, a convenient sample of 72 per cent of the students was achieved. Fifty four library professionals out of 92 librarians working in various positions in the universities and colleges also responded.

Data collection and instruments

The principal data instrument was two questionnaires: one developed around the factors that considered to be influencing the students in the choice of LIS course for their study and the other one designed for assessing the adequacy of the course content that the LIS professionals are equipped with for the effective library and information service and management.

The questionnaire for students included 14 influence factors such as *interest in LIS education, interest in LIS profession, prestige of LIS course, prestige of LIS profession, confidence of ability to do the LIS course, job opportunities, easy course to do, career advertisement, advice of friends, teachers, and parents, failure to get admission to other courses, interest in a new course, and advice obtained from career counseling*. The students were required to rank 14 factors on a scale of 1-10 to show the importance they attached to each of them. Ranking a factor as 1 meant that it was considered extremely important and most influencing while ranking it 10 meant it was least important to the student in the choice of LIS programme. They were given three choices of importance against each factor such as strong influence, moderate influence and weak influence and they were asked to choose only one against each factor according to the rank they would like to put in for a factor.

The questionnaire for the librarians included 12 questions to ascertain the adequacy of the course content and training they received while undergoing the LIS programme for positioning themselves in taking up the house keeping operations and services in modern libraries and information centres in the context of emerging information communication technologies and fast changing global scenario. *Automation*

of library and information system, resource sharing, networking, information literacy, assessment of user needs and satisfaction, management of digital library and electronic resources, web search, etc. are some of the new tasks a librarian is made responsible to carry out and this study is interested to look into these areas of modern librarianship and to examine the equipage of librarians in these areas. They were given three choices of agreement against each question such as Agree, Partially Agree and Disagree and they were asked to choose only one against a question.

The questionnaires also solicited the biographical information of the participants including their age, sex, economic status, subjects studied for graduation/post-graduation, religion, caste, area of residence (urban/rural), etc. and these information are correlated with the most strong and weak influence factors the LIS students consider for the joining the LIS programme and the observations of the librarians on the adequacy of course content and training.

Data analyses

Simple descriptive statistics based on mean aggregate and percentage analyses are used to estimate the differences in importance the students attached to the factors in the choice of LIS course and the adequacy of the course content and the practical training the library professionals received while undergoing the LIS course vis-à-vis the equipage of the effective profession.

The three choices ‘strong influence’, ‘moderate influence’ and ‘weak influence’ against each factor were given a weight of five, three and one respectively. The weighted rank for each factor is thus derived by multiplying the rank in the reverse order of 1-10 scale and the respective weight of each choice. Weighted scores between 46 and 70 were aggregated to indicate strong influence of a factor. Scores between 21 and 45 were aggregated to indicate moderate influence while scores between 1 and 20 were aggregated to indicate weak influence. The mean score was calculated for each aggregate score. Mean aggregates of each choice strong, moderate and weak against each factor were converted to percentage and consequently correlated with gender, residence status, economic status and subject of previous study.

The Findings of the Study

The students' responses with regard to their choice of course were first analysed as it is very obvious that a course of study precedes the profession concerned. Hence the factors influencing their choice of course should be first analysed followed by the response of the professionals with regard to the adequacy of content and training they received while undergoing the course. So the findings of the analyses of the students' questionnaire were first given followed by the findings of analyses of the responses of librarians with regard to their professional equipage.

The Students' Choice of Course

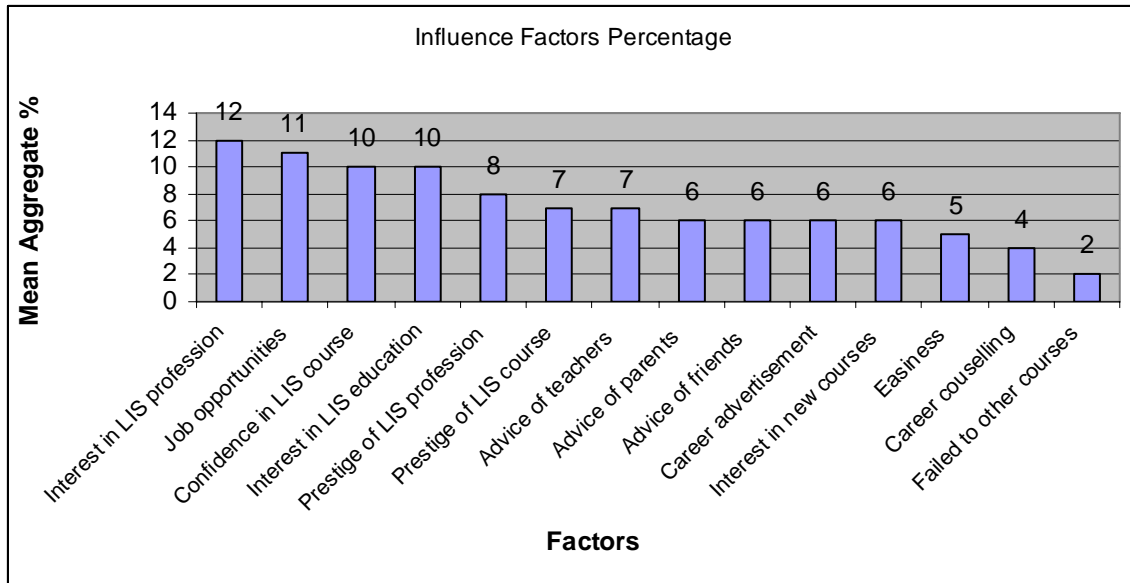
Using the mean aggregate scores for each factor, interest in library profession is found to have the greatest influence in the choice of LIS course followed by Job opportunities. The results for the influence factors are shown in Table 1 and the mean aggregate percentages for these data are shown in Figure 1. The professional interest of the students seems to be genuine as it is not immediately supported by the interest in a course not pursued for their undergraduate studies. The students were found to have built up a very good confidence in developing the essential operational and management skills in library and information services and a reasonable interest in LIS education. *Prestige of LIS course and the profession* has considerable influence in the choice of LIS course

Influence Factors	Mean Aggregate	Percentage
FW2 Interest in LIS profession	46.07	12
FW6 Job opportunities	44.35	11
FW5 Confidence in LIS course	38.59	10
FW1 Interest in LIS education	38.50	10
FW4 Prestige of LIS profession	34.23	8
FW3 Prestige of LIS course	27.74	7
FW10 Advice of teachers	27.53	7
FW11 Advice of parents	25.99	6
FW9 Advice of friends	24.95	6
FW8 Career advertisement	25.86	6
FW13 Interest in non-conventional subjects	24.27	6
FW7 Easy to do the course	22.05	5
FW14 Career and academic counseling	14.66	4
FW12 Failed to get admitted in other courses	9.73	2

Table1 Student ranking of the Influence Factors

It was also found that the *advice and guidance of teachers, parents and even the friends* had a greater say in the choice of LIS course for their career. *Career advertisement in newspaper, bulletins etc* seemed to be helpful for the students seeking admission to LIS in the choice of course. But *advice from career and academic counseling* was not a preferred factor in the choice of course. Students generally chose the LIS programme not because they *failed to get admission to other courses* or they were *interested in non-conventional subjects*, but they studied the LIS course just as they have their own genuine interest in LIS profession and education. This shows the increasing scope of the profession especially in the context of emerging ICT.

Fig. 1 Student ranking of the Influence Factors with Mean Aggregate percentage



The student ranking influence factors according to gender is shown in Table 2 below.

Table 2. Student ranking of the Influence Factors - Gender preferences

Influence Factors	Mean Aggregate Percentage					
	Strong		Moderate		Weak	
	Male	Female	Male	Female	Male	Female
FW2	62	62	29	31	13	10
FW6	0	63	74	37	26	0
FW5	53	58	33	31	14	11
FW1	100	0	0	72	0	28
FW4	57	58	32	31	11	11
FW3	57	0	43	71	0	29
FW10	60	0	40	78	0	22
FW11	60	0	40	73	0	27
FW9	100	0	0	76	0	24
FW8	0	57	0	30	100	13

Two-thirds of both the male and female students strongly considered the *interest in LIS profession* as the most sought after factor in the choice of LIS course. While *job opportunities* were the next factor for two-thirds of the females, it was a moderate factor for three quarters of the male students. More than half of both male and female respondents have built up strong *confidence in pursuing the LIS course*. While all the males strongly preferred the *interest in LIS education* for their choice of study, nearly three quarters of the female students moderately preferred this factor. While more than 50 per cent of both male and female students considered strongly the *prestige of LIS profession* as a deciding factor in the choice of study, not a single female strongly considered the *prestige of LIS course* in decision making for choice of course. Interestingly, while more than 60 per cent of males were very particular to receive the *advice and guidance from teachers and parents* in the decision making of choice of course, the female students often took their own decision, even the *advice of friends* was not a significant factor for them. The females tended to be more self reliant in decision taking of their career. But the female students were more dependent on the *career advertisement in newspapers, employment bulletins etc.*

The data in Table 3 following show student preferences according to residential area.

Table 3. Student ranking of the Influence Factors - Residence Area preference

Influence Factor	Mean Aggregate Percentage								
	Strong			Moderate			Weak		
	Urban	Semiurban	Rural	Urban	Semiurban	Rural	Urban	Semiurban	Rural
FW2	100	100	52	0	0	35	0	0	13
FW6	100	59	0	0	41	79	0	0	21
FW5	100	55	0	0	45	69	0	0	31
FW1	100	53	0	0	47	70	0	0	30
FW4	100	58	0	0	42	40	0	0	60
FW3	55	0	0	45	100	67	0	0	0
FW10	58	0	0	42	100	72	0	0	28
FW11	100	57	0	0	43	70	0	0	30
FW9	57	0	0	43	100	70	0	0	30
FW8	58	0	0	42	100	72	0	0	28

Interest and prestige of LIS profession and course, job opportunities in LIS profession and confidence in the LIS course were the significant factors for the urbanites in the choice of course. *Advice of parents* was also a strong factor for urbanites in decision taking of their career. *Advice of teachers and friends, and career advertisement* were the moderate factors for semi urbanites in the choice of LIS course. The urban students often received the *advice and guidance from their teachers* in selecting the course of study for the future career, taking into consideration the career scope of the course and prestige of the profession. The rural students did not still strongly consider a career in librarianship a prestigious one unlike the urbanites. This shows that the LIS profession has not yet won the social mobility and acceptance across the various places of residence of the society. The acute urban unemployment in developing countries may be one of the reasons for the students to go for this profession coupled with their realization of the tremendous potential and application of emerging ICT in the information industry.

The data in Table 4 following are displayed according to student economic status.

Table 4. Student ranking of the Influence Factors - Economic status preference

Influence Factors	Mean Aggregate Percentage											
	Strong				Moderate				Weak			
	UC	UMC	MC	LMC	UC	UMC	MC	LMC	UC	UMC	MC	LMC
FW2	100	100	100	11	0	0	0	77	0	0	0	11
FW6	100	100	83	0	0	0	17	95	0	0	0	5
FW5	100	100	67	0	0	0	33	86	0	0	0	14
FW1	100	100	50	0	0	0	50	77	0	0	0	23
FW4	100	100	56	0	0	0	47	50	0	0	0	50
FW3	100	100	11	0	0	0	89	43	0	0	0	57
FW10	100	100	14	0	0	0	86	20	0	0	0	80
FW11	100	100	17	0	0	0	83	11	0	0	0	87
FW9	100	100	11	0	0	0	89	7	0	0	0	93
FW8	100	100	8	0	0	0	92	16	0	0	0	84

UC – Upper Class, UMC – Upper Middle Class, MC – Middle Class, LMC – Lower Middle Class

The students were classified into four categories on the basis of economic status of their parents for the purpose of analyzing their responses viz. Upper Class with an income of more than Rs. 500,000, Upper Middle Class with an income range between Rs.300, 000 and Rs. 500,000, Middle Class with an income range between Rs. 200,000 and Rs. 300,000 and Lower Middle Class with an income of less than Rs. 200,000.

Economically upper and upper middle class students strongly preferred the *interest and prestige of LIS course and profession, job opportunity, confidence in the course, advice and guidance of parents, teachers and friends* in the choice of course. This shows the wide acceptance and social value of the LIS profession among the upper class economic strata of the urban society. This explains the increasing scope of the information industry where the urban graduates with adequate exposure to the ICT skills and operation look forward to applying them in emerging areas of the digital and web world. A social milieu has developed in India in such a way that even middle and lower middle class graduates were enthusiastic with this profession where they could get absorbed immediately after the completion of a course with duration of only one/two years, as the students' employment records revealed.

The data in Table 5 show student ranking of influence factors by subject.

Table 5. Student ranking of the of Influence Factors - Subject preference

Influence Factor	Mean Aggregate Percentage								
	Strong			Moderate			Weak		
	Humanities	Science	Commerce	Humanities	Science	Commerce	Humanities	Science	Commerce
FW2	100	16	0	0	77	0	0	7	100
FW6	91	0	0	9	100	0	0	0	100
FW5	77	0	0	23	91	0	0	9	100
FW1	64	0	0	36	82	0	0	18	100
FW4	66	0	0	34	55	0	0	45	100
FW3	32	0	0	68	48	0	0	52	100
FW10	34	0	0	66	25	0	0	75	100
FW11	36	0	0	64	16	0	0	84	100
FW9	32	0	0	68	11	0	0	89	100
FW8	30	0	0	70	20	0	0	80	100

While the humanities students ‘strongly’ preferred the first five ranked factors in their choice of LIS course for their career, the students of science ‘moderately’ and commerce still ‘moderately’ preferred these factors in the choice of course. It is a well known fact that the students of commerce and management have a better pasture in India for their career in multinational corporations, banking and financial institutions, marketing and sales executions in the context of globalization and flourishing open marketing. While bright science students with a good score in the graduation go for teacher and scientist career in universities and higher research institutions, even mediocre students selecting fields like IT, marketing, etc. Humanities students who are left with whatever positions available in teaching and clerical fields increasingly tend to choose a variety of services with essential knowledge and training in computer and internet operation acquired in the course of career.

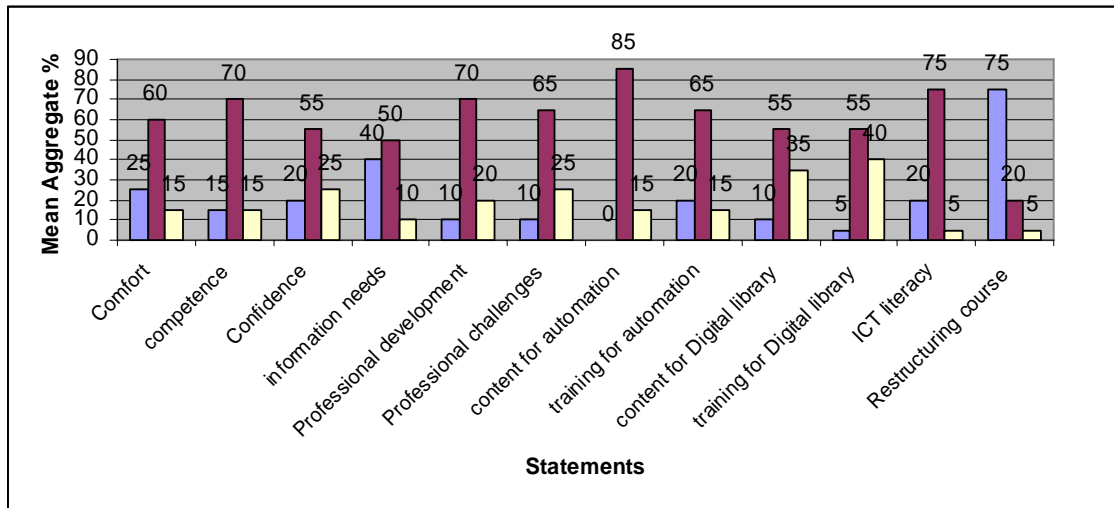
Equipage of librarians

As shown in Table 6 and Figure 2, the librarians were generally not satisfied with the content and training delivered in the LIS course they had undergone.

Table 6. Librarians views on adequacy of the course content and training

Statements	Agree	Partially Agree	Disagree
Comfortable with course	25	60	15
Adequacy of content for competence	15	70	15
Confidence with skills acquired	20	55	25
Assessment of information needs	40	50	10
Professional development	10	70	20
Professional challenges	10	65	25
Adequacy of content for automation	0	85	15
Adequacy of training for automation	20	65	15
Adequacy of content for Digital librarianship	10	55	35
Proper training for Digital librarianship	5	55	40
Adequate competence of ICT literacy	20	75	5
Restructuring course for ICT applications	75	20	5

Fig. 2. Librarians views on adequacy of the course content and training



The majority of the librarians were partially satisfied with the adequacy of the content and training. Two-thirds of the respondents were of the view that the content and training currently delivered in LIS courses in India was not fully adequate for scientific management and operation of modern libraries and information centres in the context of emerging ICT and Web technologies. Clearly, two-thirds of these respondents advocated strongly for a thorough restructuring of the LIS courses for adopting the application of ICT in the library services.

The data in Table 6 was further analysed by gender and the results of this are displayed in Table 7.

**Table 7. Librarians' views on adequacy of the course content and training
– by Gender**

Statements	Mean Aggregate Percentage			
	Agree		Partially Agree	
	Male	Female	Male	Female
Comfortable with course	24	43	71	46
Adequacy of content for competence	18	16	65	68
Confidence with skills acquired	18	16	59	57
Assessment of information needs	35	38	53	49
Professional development	12	30	71	49
Professional challenges	12	24	65	59
Adequacy of content for automation	0	19	82	54
Adequacy of training for automation	6	19	76	65
Adequacy of content for Digital librarianship	12	11	53	54
Proper training for Digital librarianship	0	8	53	57
Adequate competence of ICT literacy	24	14	71	65
Restructuring course for ICT applications	76	76	18	24

Two-thirds of the librarians across gender agreed with the need for restructuring of LIS course in India for adopting the ICT and Web technology applications in library and information services and management. More than half of the male and half of the female professionals were of the view that the content and training delivered in current LIS courses was not adequate for the effective management of modern libraries with the application of ICT.

The data on course content and training was then analysed by the librarians residency, i.e. by those who lived in urban, or semi urban or rural areas. The data for this is shown in Table 8 below.

**Table 8. Librarians' views on adequacy of the course content and training
- by residence**

Statements	Mean Aggregate Percentage					
	Agree			Partially Agree		
	Urban	Semi-Urban	Rural	Urban	Semi-Urban	Rural
Comfortable with course	46	31	36	46	69	50
Adequacy of content for competence	23	8	18	54	85	64
Confidence with skills acquired	8	31	14	62	46	61
Assessment of information needs	23	54	36	62	31	54
Professional development	8	23	32	69	54	50
Professional challenges	8	15	29	62	62	61
Adequacy of content for automation	0	8	21	77	77	50
Adequacy of training for automation	8	31	11	69	62	71
Adequacy of content for Digital librarianship	15	8	11	54	62	50
Proper training for Digital librarianship	0	15	4	46	69	54
Adequate competence of ICT literacy	23	8	18	77	69	61
Restructuring course for ICT applications	69	77	79	23	23	21

The majority of the librarians across the residence areas were of the view that the course content and training of LIS programmes was not adequate enough for adopting the emerging ICT in the modern librarianship. Therefore the LIS programmes have to be thoroughly restructured to make it fit for the ICT environment.

The data from the responses of the librarians was then analysed by economic status and the results are shown in Table 9.

**Table 9. Librarians' views on adequacy of the course content and training
– by economic status**

Statements	Mean Aggregate Percentage							
	Agree				Partially Agree			
	Upper	Upper Middle	Middle	Lower	Upper	Upper Middle	Middle	Lower
Comfortable with course	67	50	35	35	33	50	62	48
Adequacy of content for competence	0	0	19	17	67	50	65	70
Confidence with skills acquired	0	0	23	13	67	50	50	65
Assessment of information needs	0	0	38	43	67	50	54	43
Professional development	0	0	15	39	33	50	62	52
Professional challenges	0	0	19	26	33	50	58	70
Adequacy of content for automation	0	0	8	22	33	100	69	57
Adequacy of training for automation	0	0	19	13	67	100	65	74
Adequacy of content for Digital librarianship	0	50	12	9	33	0	54	61
Proper training for Digital librarianship	0	0	8	4	0	50	62	57
Adequate competence of ICT literacy	33	0	15	17	67	100	65	65
Restructuring course for ICT applications	100	0	81	74	0	50	19	26

Interestingly, half or more than half of the respondents across the economic status only partially agreed with the adequacy of the course content and training currently delivered in the LIS courses in India. The course content should be enriched and the essential skills for digital library management of electronic data sources should be incorporated in training programme so as to enable the professionals taking up the emerging professional challenges ahead.

The majority of respondents across the economic strata but the upper middle class were in favour of restructuring the LIS course for adopting ICT applications in modern library management and services. On the other hand, for the upper middle class librarians the content and training of the LIS programmes were adequate enough for modern librarianship and they did not feel it necessary to restructure the course and only half of them partially agree for restructuring the LIS course. Though the upper class and upper middle class librarians were comfortable with the content and training delivered while

undergoing the course, they were not satisfied with the adequacy of the content delivered. The majority of the respondents across the economic strata only partially agreed with the adequacy of the course content and was of the view that a lot has to be done to enrich the content of the course and to provide training in equipping future professionals with the essential skills in computerized and digital librarianship.

The results of the questionnaire responses for the librarians were then analysed by their subject background and the results are shown in Table 10.

Table 10. Librarians' views on adequacy of the course content and training- by subject background

Statements	Mean Aggregate Percentage					
	Agree			Partially Agree		
	Humanities	Science	Commerce	Humanities	Science	Commerce
Comfortable with course	25	48	29	60	44	71
Adequacy of content for competence	15	15	29	70	63	71
Confidence with skills acquired	20	15	14	55	56	71
Assessment of information needs	40	33	43	50	48	57
Professional development	10	26	57	70	48	43
Professional challenges	10	22	43	65	59	57
Adequacy of content for automation	0	19	29	85	48	71
Adequacy of training for automation	20	7	29	65	74	57
Adequacy of content for Digital librarianship	10	11	14	55	48	71
Proper training for Digital librarianship	5	4	14	55	52	71
Adequate competence of ICT literacy	20	7	43	75	63	57
Restructuring course for ICT applications	75	81	57	20	19	43

While more than three quarters of the librarians with humanities and science subjects background were of the view that the course content is too poor to take up the professional challenges ahead, the librarians with commerce and management subjects back ground seemed to be little more satisfied with the adequacy of course content especially for future professional development. However majority of the librarians irrespective of their subject background agreed with the restructuring of the LIS programme.

Implications for restructuring the LIS Programmes

The sample size and the convenience sampling strategy employed placed considerable limits on the generalisability of the findings of this study. By using simple descriptive statistics with mean aggregate percentage and cluster analyses, the findings broadly confirm what was already known about the inadequacy of LIS course content and training in India as already observed by C. R. Karisidappa (2004) in his survey of

curriculum of LIS schools in developing countries. The findings also confirm the fact that career opportunities is a significant factor for students in choice of LIS programme as already shown by Felix Maringe (2006) in his study on the implications of university and course choice in the recruitment market of higher education in England.

Implications of Course Choice by the students

Though LIS recruitment market reflects a gender balance between male and female applicants for their professional interest, career opportunities is a strong influence for two-third of female students but a moderate factor for three quarters of male students. This asserts the findings in the studies of Maringe (2006), etc. that there are areas in Higher Education (HE) fields of study like medical and health sciences which have a significant prominence for female participation. Male graduates have a variety of challenging opportunities opened in the dynamic environment of globalisation with its open market investments and business process outsourcing. ICT and Web technologies are the new pastures for the young graduates. LIS course has to be thoroughly restructured so as to enable the LIS students to take up the new challenges and opportunities in the emerging information industry and management.

Parents, teachers and friends provide the formal platform for advice to students about HE choices and decisions. The gender balance is also not reflected for female applicants in taking advice and guidance from teachers and parents for the choice of LIS course. The female applicants tend to be more self-reliant in decision taking of their career. This is in contrast with the findings in the study of Fosket, Dyke & Maringe (2004) where male students consider all these sources as relatively unimportant to their course choice in HE fields of study compared to female counterparts who are more concerned with building and strengthening relationships which help them survive in what they may perceive as a male dominated environment. Increasing empowerment of women in education, job markets, civil services etc. and the tendency of becoming economic self-reliant may be accrued to the independent decision taking of their career. The female graduates are seeking the admission to LIS programme for secure job opportunities so as to enable themselves socially and economically self-reliant. The implications for restructuring the LIS programme are clear that the course should incorporate a lot so as to

attract the opportunities in diverse fields in education, mass media, portfolio, business corporate, tourism, hotel management etc.

The dynamic enrolment of graduates from urban area with reasonable exposure to ICT in LIS recruitment market implies for restructuring the course with enriched content and effective training in ICT and Web technologies. The LIS recruitment market will be thereby attracting urban male applicants and providing those opportunities to apply whatever computer skills acquired for adopting ICT in library and information management and services. The low profile of the applicants from rural lower middle class indicates that the LIS course should be restructured so as to make it economically viable with rich content and effective training and thus attracting these students to the LIS recruitment market. LIS course may be restructured by incorporating a variety of information systems and processing in banking, stock market, financial management, entrepreneurship, transportation, shipping etc. to avoid the drifting away of the students of commerce and management background from LIS programs. These findings conform with the observations made by Hesketh (1999) that students are no longer passive choosers, but are becoming increasingly involved in calculating anticipated rates of returns to the investment they put into HE study.

Implications of Equipage of Professionals

The library professionals across the gender, area of residence, economic criteria and subject background in the project undertaken were not generally satisfied with adequacy of the content and effectiveness of the training delivered in LIS course. The courses they have undergone is helpful for further professional development and enabling them to assess the information needs. But the content was not adequate and the training is not effective to take up the emerging professional challenges ahead in the modern librarianship with the application of ICT and Web technologies. They were of the view that the LIS course content has to be enriched and that essential skills for digital library management of electronic data sources need to be incorporated so as to enable the professionals taking up the challenges ahead. . These views of the librarians assert the observations made in the studies of Gorman (1999), Karisidappa (2004) etc.

The overall implications for professional equipage of librarians are that though the LIS course they had undergone are helpful for their further professional development, the content and training delivered in the course were not adequate enough to take up the emerging professional challenges ahead in the modern librarianship. They all are of the view that the content and training of the current LIS programme too inadequate to meet the application of the professional challenges of ICT and Web technologies.

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