

TRAINING NEW GENERATION INFORMATION WORKERS: THE ENTRY LEVEL LIS DEGREE PROGRAM IN INDIA

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Introduction. Some fundamental re-thinking on restructuring professional education programs for training information & library professionals has been a characteristic feature of recent developments in this area in most developed countries. This paper makes an attempt to examine the requirements of the job market and their implications for the first degree LIS program in India.

Method. Three principal methods were employed: An analysis of job notifications in the media in the last one year; a destination survey of graduates; and a questionnaire survey of information professionals.

Results. The corporate sector has emerged as a major employer of products of LIS schools. Most openings are for entry-level information workers. The tasks performed in and the skills required by the corporate sector are different from those required in a library.

Conclusion. There is a need to restructure and re-orient the Bachelor's degree program in Library & Information Science in the Indian universities to meet the needs of information environments outside the library.

1. Background

In India, as in some other countries, a university degree in Library & Information Science (LIS) – Bachelor's or Master's – builds upon a Bachelor's or Master's degree in some other discipline. Historically two factors appear to have influenced this:

- Universities and institutions of higher education and research were among the first to accord importance to libraries and information services as an essential input to quality education and research. Libraries in these institutions were given primacy and provided with decent funding especially in the first few decades after India attained independence. Most of the openings for LIS school products were naturally in these institutions and it was firmly believed that a Master's degree in some other discipline would be useful in functioning effectively as librarians in these institutions;
- Institutions of higher education and research also accorded LIS professionals parity in pay with faculty / scientists. This in turn necessitated that LIS professionals should have qualifications comparable to members of faculty and scientists.

Barring a few states, public libraries are not seen as major employers of products of university schools in LIS. For most part since India attained independence, therefore, LIS schools have oriented their programs to train manpower suitable for working in large academic and research libraries.

LIS education in India started as vocational education. Establishment of LIS as a research-based academic discipline is still in the making although in the years since independence some LIS Schools have moved quite far in this direction. Even so there are differences between institutions of higher education with respect to how far LIS schools in the country have moved towards academia. However, most LIS schools in India are fairly firmly established within the university system and the university

system of academic degrees; this is so even if the course contents display a certain degree of vocational anchoring. The university schools of LIS account for a very large proportion of professional LIS manpower trained in the country. As such any meaningful and visible change in the nature and quality of professional LIS education in the country can be brought about only when university LIS schools initiate and implement changes. In recent years restructuring LIS education programs appears to have been on the agenda in several countries. The initiatives in the United States resulted in the famous Kaliper Report, the *I-school movement*, etc. The EU and Japan have also initiated parallel processes. Even in India the University Grants Commission had initiated an exercise aimed at curriculum reforms in the 1990s. Globally two broad approaches can be seen: the discipline-oriented approach and the profession-oriented approach. One approach is to view and move towards a situation in which LIS will be developed into an academic discipline like psychology or chemistry. Such disciplines, as the ones mentioned above, are not linked to any specific and institutionalized field of practice. When such a situation fully develops, LIS will be viewed as the science of information studying the phenomenon and practice of information in general without links to any specific professional field of practice. Even references to librarianship may tend to get omitted. The other approach is to develop a profession-oriented perspective and aim at developing an academic and research-based profession like the established professions of law and medicine. In these established domains, a profession refers to a field of practice based upon a body of scientific knowledge. An examination of the trends in LIS education in India, suggests that both these approaches have been adopted. The integration, in many universities, of the Bachelor's and Master's degree programs into a two-year master's degree program can be partly seen as an effort to obtain disciplinary status for Library & Information Science on par with the university programs in the more established disciplines. Which of these two strategies one chooses will obviously affect the relationship to the field of practice. However, the Bachelor's degree program in Library & Information Science is still widely offered and seeks to train information professionals for entry-level job positions requiring strong information handling skills. The bachelor's degree in the field from an accredited institution certifies a person to perform as a practitioner and defines him / her as a member of the LIS profession. However, there is a strong feeling that there is a 'mismatch' between the requirements of the job market and the products of LIS schools.

2. Earlier Studies

There have been a few studies that have sought to examine the job market for LIS professionals vis-à-vis the LIS education programmes. Although the studies have been reported from different countries, these appear to report similar findings (Ferreira, 2007; Flood, 2003; Kavulya, 2007; Lee & Fang, 2008). Almost without exception the studies suggest that the information-related job market is diversifying and that there is a gulf between knowledge and skills acquired in LIS schools and those required by the job market. It does indeed appear that the concept of core competencies is increasingly being taken into account while employing especially by the productive sector of the economy. One of the studies reported that Master's degree holders are finding it difficult to find jobs in libraries as most entry-level jobs are getting de-professionalized with the increasing levels of automation of libraries. Not many studies have been carried out in India although there have been efforts initiated at restructuring course contents. In a study Raghavan and Agrawal (2005) had reported that the corporate sector is emerging as a major job market for LIS professionals.

3. Objectives and Methodology

This paper is based on the hypothesis that:

- A first degree program in LIS continues to be relevant in the emerging job market;
- There is a large job market for information professionals outside the conventional library job market, especially in the corporate sector

- It is feasible to restructure the B.L.I.Sc. Program so as to train manpower capable of working in a wide range of information job markets including libraries

Towards this end the paper:

- Attempts to profile the emerging job market for information manpower in India
- Identifies the nature of skills and knowledge required to function effectively in the emerging information environment
- Outlines the approach being considered in a new proposal for professional education program in LIS initiated by a major university in the country.

The following methods were employed to gather relevant data for this study and to get an idea of the nature of the job market:

- A macro-analysis of job notifications for information professionals in two important forums was undertaken. The *Times of India*, a national newspaper with editions coming out of several major Indian cities, carries a weekly supplement on Wednesday carrying job notifications from a wide range of organizations – academic & research institutions, large industries and corporate houses. The Times Classified sections of all Wednesday issues of *Times of India* Mumbai edition for the period 1st July 2007 to 30th June 2008 were examined. The LIS Forum operated by the National Centre for Science Information, Bangalore, among other things, also serves as a channel to inform the wider LIS community of vacant job positions in the field. All job notifications notified via the LIS Forum during the period between July 2007 and June 2008 were also examined. While these two sources are not exhaustive, it is fair to assume that the job notifications appearing in these are fairly representative and reflect the present and emerging scenario.
- A destination survey of all those admitted to the DRTC program and who graduated beginning with the 2000-2002 batch was also carried out.
- A questionnaire survey was carried out by sending out a simple questionnaire (see Appendix) via E-mail to students who had graduated from DRTC in the last few years and are employed in different organizations.

4. The Findings

Obtaining a comprehensive and complete picture of the job market in any country is indeed a difficult task as many of the job positions get filled up by contacting known educational institutions or via HR consultants. These are rarely advertised in the print media or on the Web. However, it is fair to assume that the job positions advertised in the print media and in some popular professional forums are indicative and representative of the trends in this regard. A total of 338 job notifications during the period under study were identified from the two sources. The job notifications and the responses to the questionnaire were examined to obtain a picture of:

- The job profile in LIS
- The nature of organizations looking for LIS professionals

An examination of the titles of advertised job positions indicated that only 50% of the job titles carried the word 'library / librarian'. Based on the nature of the agency advertising the position, the advertisements were grouped into three broad categories:

- Academic and R & D Organizations (Including Universities, CSIR, DRDO, etc Laboratories, Colleges and also faculty positions in L&IS)
- Corporate Sector
- Others (Including International Organizations, NGOs and many other agencies that had only given a mobile number or mail Id as contact)

The distribution of the positions advertised is as under:

Academic and R & D	Corporate Sector	Others
240	54	44

Table-1

While a majority of the openings are still in the educational institutions and R & D laboratories, interestingly nearly 30% of the openings are in organizations outside this sector. In fact the actual figures could be much higher as most corporate houses do not normally advertise positions in the media. Many openings especially in the corporate sector are filled up by suitable persons identified by directly contacting library schools or via other informal channels. The job notifications were examined to get some idea of the trends and directions. The job titles included:

- Technical writer / Content Writer
- Data Centre Manager
- Innovation Officer (Documentation & Information)
- Library Services Executive
- Research & Communication Officer
- Web Developer
- Sales Executive (Information Publishing Industry)

An important finding is that the library / information job market is changing and diversifying. The nature of skills expected of LIS professionals also indicated substantial variations from what normally constitute the contents of educational programs in L & IS. Today there are many more information handling and processing situations and contexts outside the library. Even within the library the situation has changed substantially requiring new skills among LIS professionals. The automation of many of the housekeeping activities of the library has, if any, resulted in converting many tasks that were previously being performed by LIS professionals into tasks that are easily performed by semi-professionals. The following table presents extracts related to 'skills expected' as also some job titles from the advertisements.

Job Titles	Skill Requirements
Web Designer	Coral draw, PageMaker, Dream weaver; HTML, Xhtml, CSS and Knowledge of Web standards
Data Centre Manager / Technical Writers	Experience in Adobe, DTP Tools, technical proficiency in XML authoring and good communication skills; Oral and written communication skills in English.
Head, Knowledge Management & IS	Setting up systems & administering knowledge services in the educational & research context, while proactively marketing various IPR (intellectual property) of ... through different channels, will be the key responsibilities
Research Librarian	Strong understanding of the key issues and trends in the design and delivery of library instruction in support of the academic mission of the university; Successful teaching experience
Associate Annotator	Proven track record in a fast-paced, multitasking environment; Ability to take initiative to identify and solve problems; Excellent English communication skills; Detail-oriented in nature; Background or interest in library science, linguistics or communications

Table-2

An examination of the notified positions also suggested that while there were a few top-level management positions and a few faculty positions, over 90% of the positions were for entry-level professional positions.

The graduate destination survey of 44 students who graduated from DRTC in the last six years beginning with the batch of students admitted in 2000 suggested that the corporate sector is emerging as a major employer and has the potential to provide job opportunities to products of LIS schools. Destination information of 39 of these was available. The details are as below.

Corporate Sector	Pursuing Full-time Ph.D.	Government / Academic Sector (DRDO, CSIR, Universities, etc)	Others (NGOs, Contact Libraries)	Destination Information Not available
30	3	3	3	5

Table-3

Unemployment among those who graduated from DRTC is low (almost nil). Less than 30% of those working were in 'library jobs' and an overwhelmingly large percentage of those who graduated were working in other 'information-related' jobs. Nearly 70% of those who graduated are working with corporate houses (with IBM accounting for more than 50% of these). With the objective of obtaining a general understanding of the nature of tasks performed by and skills expected of those employed in the corporate sector, a brief questionnaire was sent out to students employed in the corporate sector (See Appendix). The findings of the survey further reinforced some of the findings drawn by analyzing the advertisements. Some data indicative of the trends are presented in the table below.

Job Title	Unit attached to	Sample Tasks performed	Any other LIS professionals in the Unit?
KM Tool Support Specialists	Learning and Knowledge Division	Working with KM & Learning and Knowledge portals; Update portal with current content; Checking and updating of inactive links. Working with Content management system: Sending content uploading request form managers & project executives; Content checking for duplicate assets, for removing Organization's confidential information; Selection of content for IP law review.; Performing all CM activity before publishing of content (correction in content title, writing proper abstract for the content, tagging of asset according to the organization standard taxonomy (Content classification); Maintaining content workflow process; Working with feedback process Creating & Sending L&K Newsletters through mass mailing system: KM Tool support: Working with L&K wiki; Creating L&K wiki page using html, wiki syntax, macros, CSS etc.	YES
Knowledge Harvesting Facilitators	Knowledge Sharing Delivery Center	Training bench resources on tagging, rating documents, reviewing and publishing documents on the portal Catering to Clients on wiki requests Content Management work.	YES
SQA Engineers	Quality Management Unit	Building & Maintaining KM Portal Process assessment audits and improvements at par with the ISO and CMMI specifications	YES

Table-4

It should be obvious that the tasks performed by LIS professionals, especially those employed in the corporate sector are quite different from the tasks that are expected of them in conventional libraries attached to academic and R & D organizations. While those who responded to the questionnaire indicated that the training that they obtained was useful in providing skills relevant to their current position, there were inputs as to what could be done to enhance the suitability of the graduates to the emerging work environment in the corporate sector. Some of the skills required for performing these tasks effectively and efficiently based on extractions from the inputs made by those employed in the corporate sector are mentioned below:

- Personality development and communication skills
- Content creation & Technical Writing skills
- Content Management Systems, tools & technologies
- Programming Languages (Java, C++, etc)
- Searching of financial databases
- Some standard proprietary databases (e.g. Oracle, SQL, etc) in addition to Open Source and public domain tools and technologies

5. Conclusions and Suggestions

While it is likely that the traditional library job market consisting largely of openings in the Government sector and in academic institutions will remain stable thanks to the expanding higher education sector, it is the corporate information job market that has emerged as a major employer for products of LIS schools. The indications are that this sector will continue to grow given the rate of growth of the Indian economy and the Government policy that has opened up the economy to private foreign players. These findings confirm that the trends identified and reported earlier (Raghavan and Agrawal, 2005) are strengthening further. The needs of the corporate sector and the developments will largely be driven by corporate imperatives resulting from the need for utilization of new information technologies given the global distribution of the user community even within a single organization. There are clear indications that information delivery and access are increasingly becoming dis-intermediated suggesting a need for repositioning of the role of the LIS professional. These have generated a need for a new breed of information professionals who know how to deliver information for particular applications to members of the corporate communities familiar with the convenience of the services offered by Google. This new breed of information professionals should be able to ensure that information services support organizational goals. The roles include 'traditional' information roles, as well as the creation of new employment opportunities. The survey has also brought out the fact that many of the openings are at the entry level where technical skills matter more than managerial supervisory skills. One of the issues before the LIS education planners in India, therefore, is how to restructure and reorient the first professional degree program so as to generate the manpower with employable skills especially in the corporate sector.

5.1 Restructuring the Entry Level Program:

LIS education in India is not extensively offered at the under-graduate level. University LIS schools offer either a 2-year master's degree program or a 1-year Bachelor's degree program followed by a 1-year master's degree program for graduates who have majored in some discipline. Historically the B.L.I.Sc. Program in Indian universities was designed to train LIS manpower to work at entry and middle level technical positions in academic and research libraries. The examination of the emerging job market appears to suggest the continued relevance of this program if only the program could be re-oriented to meet the present and future needs. In restructuring and reorienting this program, perhaps the experiences of developed countries such as the United States are relevant. The Kaliper report (2000), which looked at the implications of the changes in the information environment for LIS education and examined how LIS schools have responded to these changes, identified the following trend:

In addition to libraries as institutions and library-specific operations, Library and Information Science (LIS) curricula are ad-

dressing broad-based information environments and information problems.

The information market place today is not so clearly and well defined as it was when our educational programs considered libraries as the market place. Developing a vision of the information profession as a whole is difficult given that many at various levels with different job titles perform information-related tasks. What we must attempt therefore is to develop a vision of that segment of the information market place in which we can play a meaningful and useful role. The Indira Gandhi National Open University, New Delhi (IGNOU) took an initiative in this direction recently. IGNOU convened a Workshop of LIS experts to discuss the subject of restructuring their Bachelor's degree program; as a forerunner to the workshop opinions and inputs were sought on a nation-wide basis via e-mail and all the inputs received were made available to the experts invited to the Workshop. The Workshop generally agreed that the corporate sector and the media industry (especially the electronic media industry) are emerging as major job markets and considered the need for restructuring and reorienting the programs to meet the needs of these sectors. The following broad approach was employed:

That there exists a strong need for looking beyond conventional libraries as potential job markets for products of LIS schools was widely recognized and conceded. It was also recognized that certain skills and the theoretical underpinnings of these skills, are essential and useful in a wide range of information environments for all information professionals irrespective of the nature of the information institution / environment – libraries or otherwise - in which they work. The broad structure of the proposed new program is as below:

- A set of 'common courses' including courses on theoretical foundation of information work and service and some courses labeled as 'soft skills' has been identified; All students admitted to the program will undergo these courses (accounting roughly for about 40% of the course work / contents).
- The proposal is to identify several different parallel job streams / institutional information environments for information professionals. These include, e.g., the library, the information / knowledge management units in the corporate sector, the electronic media industry, etc. For each of these streams courses are being defined. On completing the 'common courses' students may opt for a particular job stream.

At present a few job streams have been identified in addition to the *library*. But the structure of the program is flexible enough to accommodate several other information-related job streams should the need emerge. It was also proposed to initiate a dialogue with the concerned people drawn from the corporate world, electronic media, etc. While a more comprehensive study needs to be initiated to identify and understand the needs of these sectors, the present study reporting a survey of the job profiles of information professionals sought by the corporate sector in recent months based both on an examination of the jobs notified in the media and on inputs from professionals working in the corporate sector clearly suggests that the approach being adopted by the IGNOU is indeed a move in the right direction. The existing programs need to be revised and reoriented to reflect the following broad objectives:

- To provide a clear understanding of the philosophy and theoretical underpinnings of information work and profession and the legal and ethical issues involved
- To provide a knowledge of information institutions and environments whether public, academic, industrial or commercial, and an understanding of the information needs and information-seeking behaviours of individuals and organizations
- To provide an understanding of the nature of information in all forms - printed, electronic, graphic or other form – its value, communication, storage, retrieval and use
- To provide an integrated professional education in information skills and a knowledge of the systems and technologies by which information is handled

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Appendix

Dear friends: I have undertaken a small study. I am interested in identifying if there is a 'mismatch' between the knowledge & skills required / expected by the present day / emerging job market and the contents of our educational programs. I know that many of you have entered the corporate sector (and not the conventional library in the academic or R&D environment). Based on your experience, I would appreciate receiving your inputs regarding:

1. The exact nature of the job / tasks you are performing
2. Your Job title
3. The name of the division / unit to which you are attached
4. What skills would you like us to incorporate in our syllabus to prepare information professionals for jobs like yours?
5. How much of on the job training is provided in your organization?
6. Are there other LIS professionals working in your division?
7. Any other comments about the DRTC Training program: What it lacks, how it could be improved, etc

I thank you for your cooperation.

Sincerely

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