



Current trends in library and information studies curricula around the world

Trends in library
and information
studies

Looking for the user-centred approach

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Abstract

Purpose – The purpose of the study is to identify current trends in library and information science (LIS) education related to the user-centred approach adopted by libraries and information professionals in response to the advent of the internet.

Design/methodology/approach – Course descriptions of 30 LIS departments around the world were analyzed based on Wilson's map of information science that proposes five basic foundations fields: information content, information systems, people, organizations, and policy. The analysis focused on the user-centred people field and on the interactions between this field and the other four fields proposed by the model. Course descriptions found in the departments' web sites were analyzed using the content analysis method and eight categories were revealed in the analysis that represent the different interactions between the fields.

Findings – Findings show that LIS departments have been successful in infusing the traditional information-related curricula with a user-centred approach but they have yet to develop areas of study that strengthen the students' social skills.

Research limitations/implications – The data collection method limited the scope of the study. By restricting the data collection to course descriptions as advertised in the departments' web sites the study could only analyze the departments' intent and not their actual work in the field.

Originality/value – The study recommends the implementation of courses dealing with social or personal skills.

Keywords Information science, Education, Libraries, Social skills

Paper type Research paper

Introduction

The advent of the internet and the quick and easy access it provides to vast amounts of digital information sources have greatly affected the ways users interact with information sources and have made them more independent information savvy users. Libraries, once having a monopoly on the delivery of information were now considered by users as a very small piece of the information pie. These developments have prompted a radical change in the "information paradigm" that has shifted from a systems-oriented approach that focuses on how the systems work and get used to a user-centred approach that examines the system only as seen by the user and centres its attention on the users' information needs and behavior. This paradigm shift has transformed the provision of information and the roles of the information professionals and the nature of their work. In response to the changing nature of information work, library and information science (LIS) education has undergone significant changes over the years. The aim of this study was to investigate to what extent this shift in the



focus of the “information paradigm” has been reflected in LIS curricula, in other words to what extent LIS curricula have adopted a user-centred approach.

Literature survey

Modern library education began in 1887 when Melvil Dewey founded the first school for training professional librarians at Columbia University. Several other library schools were founded in the USA and in the UK in the first two decades of the twentieth century (Mortazaie and Naghshineh, 2002; Torstensson, 2002). By this time, there was a general feeling in the field that library education needed to be revised. This feeling led to an investigation requested by the Carnegie Corporation that proposed a new structure for library education based on the university system. The establishment of the graduate library school (GLS) at the University of Chicago in 1926 was one of the major results of this investigation. According to Tortensson (2002, p. 213) the “start of the GLS has often been seen as a cornerstone for the foundation of a library science in a modern sense.” Furthermore, Buckland (1986) stated that at this early stage, research in the LIS field was user-centred because it focused on finding ways to best satisfy users’ needs through the work of the public library. However, the focus soon changed to a library centred approach and subjects like library administration became a central theme of study in LIS education.

The next major development in LIS education came about in the 1960s when library schools started to shift the concept of study from library science to LIS (Rayward, 1997). This change reflected the gradual maturing of library schools as academic departments that acted within a broader view of librarianship: libraries of all kinds, archives, databases, records management, retrieval-based information services, bureaucracies and both abstract (text) and concrete (text-bearing objects) representations of information (Buckland, 1986).

Following this period of change, the 1980s was a decade of crisis in LIS education. Ten LIS programs closed in the USA alone, including two of the most prestigious programs at the University of Chicago and at Columbia University. Paris (1990) argued that isolation, ineffective leadership, conflicts with other departments such as business and computer science and the failure to promote their programs were among the factors responsible for the closings. One of the strategies used by LIS departments in order to confront the prevailing crisis in those years was the integration of information science into library education and by the end of the decade more than 80 percent of the LIS programs incorporated “information science” or information” in their names “to reflect their expanded coverage and to help position graduates for employment in the information sector” (Logan and Hsieh-Yee, 2001, p. 427).

In the 1990s, LIS programs had to cope with unparalleled constant and rapid change. In their paper about LIS education in the 1990s, Logan and Hsieh-Yee (2001) argued that the changes identified in LIS education were responses to developments such as technological innovations, the rapid expansion of the information economy, continued awareness of global and multicultural issues, adoption of new delivery formats, specialization and expansion in study programs and the formation of interdisciplinary partnerships within and outside the university.

The changes that LIS departments underwent in the 1990s are reflected in the Kaliper report published in the year 2000 (Kaliper Advisory Committee, 2000) which identified six major curriculum trends in LIS departments in the USA:

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- (1) LIS curricula are addressing broad-based information environments and problems;
 - (2) LIS curricula contain a unique core of courses that are user-centred;
 - (3) LIS schools and programs are increasing investments and infusion of information technology into curricula;
 - (4) LIS programs are experimenting with the structure of specialization of their programs;
 - (5) LIS schools are offering instruction in different formats; and
 - (6) LIS schools are expanding their programs by offering degrees at multiple levels.

The shift to a user-centred approach is evident in the findings of the study. The Kaliper report stated that “there is little doubt that user centredness infuses most of the research and teaching in LIS” and the results showed that the emphasis on users was evident not only in the schools missions and vision statements but also in incorporation of the “user paradigm” in system-centred courses such as cataloging and data management. A later study that compared two approaches to structuring LIS education and research (Audunson *et al.*, 2003) supports the shift to a user-centred approach by claiming that the librarian’s function will shift towards that of a guide that informs and educates users and for that he needs to learn how to teach and instruct users and how to promote reading and literature.

The user-centred approach is also noticeable in the information professionals’ perception on the nature of their work and character and in the roles and character of the library. This new approach proposed a restructuring of the library into a more user-centred organization (Basefsky, 1999; Coutts, 1997). Lewis (1994) described user-centred libraries as institutions centred on its human resources in which reference services will become the primary function of the academic library. This development will require a radical departure from the generally accepted view that the public and technical services are equally important and should receive roughly equal levels of support, leading to a misallocation of resources. In a Delphi study on the future of the LIS profession, Baruchson-Arbib and Bronstein (2002) found that 85 percent of the participants believe that it was highly desirable that LIS professionals devote themselves to understand how people seek and consume information. Furthermore, the study showed that for 75 percent of participants the replacement of the traditional library principle of cataloguing the book to its ultimate detail by the user-centred approach of working to ensure that the book reaches the user on time was a highly desirable change.

Another example of the changes in the perception of the work of the information professional can be appreciated in an innovative user-centred field of study proposed by Baruchson-Arbib (1996, 2000, 2004). Baruchson-Arbib proposed the creation of a social information science, in an effort to create an atmosphere that will motivate individuals to ask for help and assistance from an information professional concerning their information needs on social and medical issues. Social information science is a user-centred field that concerns itself not only with the users’ information needs and behavior but it encompasses the study and development of products and services relevant to the retrieval and processing of social and medical information. This new field of study is based on the premise, widely proclaimed in the literature of LIS but

scarcely applied, that together with the technological and informational developments, the LIS community needs to develop the humanitarian and social aspects of the information society by developing and expanding social role of the library and to empower users through the use of information.

Nowadays, the social aspects of information in general and the empowerment of users through their interaction with information have been developed and strengthened by the next evolutionary phase of the internet called web 2.0. The term web 2.0 was first conceptualized by Tim O'Reilly in 2004 to describe applications or "social software" that were collaborative in nature, interactive, dynamic and in which the line between information creation and consumption was blurred (Maness, 2006). Social software such as blogs, wikis and virtual networks are the next step in the transition to a full user-centred approach that allows users to create, change and publish dynamic content of all kinds (Stephens, 2006). Libraries have accepted the challenge posed by these technologies and have begun to incorporate many of these social tools into their information services and practices under a new model called library 2.0 (Casey, 2006).

This study is the type of study that evaluates the content of LIS curricula by following a certain model or theory for LIS curricula development. Based on Wilson's map, the present study investigated to what extent, as a result of these far-reaching changes in the creation and the use of information, the user-centred approach has been incorporated into LIS curricula. In contrast, there are two other types of studies dealing with LIS education. Studies that review recent trends and issues in LIS education in a particular country (Ameen, 2006; Elkin and Wilson, 1997; Miwa, 2006; Rodriguez Gallardo, 2007; Virkus and Wood, 2004) and studies that identify the skills and competencies that are required of LIS graduates that are also relevant to the scope of this paper.

The studies that reviewed professional skills and competencies did not find the shift to a more user-centred approach apparent. Studies dealing with the skills and competencies required of LIS graduates have found that the LIS community still regards technological and information related competencies as central to the work of the information professional and includes communications skills and other user-centred subjects as "supportive subjects" (Cooper and Lunin, 1989; Malinconico, 1992; Raju, 2003). Buttler and Du Mont (1989, 1996) conducted two studies that investigated the attitudes of library school alumna's regarding the value of various professional competencies and found that in both studies "people skills" were rated in a lower place in the scale than "technical skills" such as knowledge of information sources and collection management skills. However, they pointed that for experienced librarians "the significance of effective communication and human relations increases" (Buttler and Du Mont, 1989, p. 15).

Three reports have been recently published on the subject of professional LIS skills and competencies. Audunson *et al.* (2003) reported on a consensus reached by Norwegian information professionals about the new curriculum at Oslo University College aimed at producing a "complete librarian." Participants included areas related mainly to information handling as the core of the program:

- knowledge organization and retrieval;
- promotion of culture and knowledge;
- knowledge of literature;

- organization and management; and
- information technology.

The European report (2004) “Euroguide: LIS competencies and aptitudes for European information professionals” emphasizes information and technological competencies required from information professionals. The report classified 33 fields of expertise into five groups:

- (1) *Group I – information*. This is “the heart of the profession” of LIS, that is, the fundamental fields of expertise which an information professional must have, at least on a moderate level.
- (2) *Group T – technologies*. This field translates the necessary expertise in information technology and the internet.
- (3) *Group C – communication*. Necessary to occupations in LIS, the expertise of communication is indispensable and so linked to information that they are necessary for any LIS professional to have.
- (4) *Group M – management*. Equally indispensable for information professionals in the global management of information and activities. These competencies permit them to be informed and active interlocutors of budget management, marketing, human resources and training.
- (5) *Group S – other scientific knowledge*. This particular group takes into account the competencies associated with the users’ sectors or with highly specialized information or documents that need to be treated. This report presents a strong information-related approach; of the five groups of competencies proposed in the Euroguide report the only user-centred competencies mentioned in the report are communication competencies.

In contrast to, the aforementioned classification, the third report, “Competencies for information professionals of the 21st Century” Special Library Association (SLA, 2003) proposed a classification that emphasized user-centred competencies. The three major groups are:

- (1) Professional competencies: relate to the practitioner’s knowledge of information resources, access, technology and management, and the ability to use this knowledge as a basis for providing the highest quality information services.
- (2) Personal competencies: represent a set of attitudes, skills and values that enable practitioners to work effectively and contribute positively to their organizations, clients and profession.
- (3) Core competencies anchor the professional and personal competencies (p. 2).

Other studies that investigated and evaluated the content of LIS curricula proposed a model or a theory for LIS curricula development (Dresang and Robbins, 1999; Gorman, 1999, 2004; Wallaca, 2002; Weech and Pluzhenskaia, 2005). Lancaster (1994) presented a holistic view of information science that is essentially multidisciplinary and it covers all phenomena involved in the transfer of information from the producer to the consumer. Stuart (1998) proposed a general model for LIS curricula that included the following components:

- information and referral services: ways to put users in contact with a variety of information services, sources and activities;
- information seeking behavior of people: factors associated with people needing, using and acting on information;
- information systems: political, economical, social and technological factors affecting information;
- standards and standardization; and
- interdisciplinarity of the profession.

The model that served as the basis for analysis in the present study was Wilson's (2001) map of information studies. Wilson proposed a typology of the areas related to information studies with the purpose of assisting in the development of LIS curricula in general or aiding in the development of one particular field of study. This typology is based on five foundation fields that encompass all LIS subject fields and activities and the model may be seen as the result of the interaction among the fields:

- (1) *Information content*. This field includes the means for identifying, organizing and providing access to information content. The organization and management of information resources has been a traditional function of libraries and information centres for decades. However, Wilson (2001) proposed the term "information content" instead of the conventional "information resources" because the impact of the internet and the world wide web has brought libraries and information centres to deal not only with publishers of traditional information resources but with a wide range of "content providers." This category will include subjects dealing with the organization of information (i.e. cataloging and classification) and the provision of access to information pertaining to a particular subject field.
- (2) *Information systems*. This field includes communication and information technologies that are used in the organization of information content in information systems.
- (3) *People*. This is the central field in this study because it represents those subjects that are user-centred. This field includes all subjects dealing directly with information users and information providers that manage information systems and services and the interaction between these two groups. This category will include subjects dealing with the interaction of users with content (i.e. information use, literacy, learning, etc.) or with information systems (i.e. information seeking and searching). In addition, this category covers the roles and functions of information providers.
- (4) *Organizations*. This field includes subjects dealing with three kinds of organization: information producers such as publishers that produce the information content; libraries and information centres that organized this information content and make it available and accessible to users; and other organization in which information content is managed and used by information users.

- (5) *Policy, planning and strategy*. This field includes subjects dealing with policy making, planning and strategy development at organizations directly related to the organization and use of information content.

To further explain his model, Wilson (2001, p. 438) provided an example of the interactions between the five fields in the complete typology presented as a list:

- (1) Information content.
- (2) Information systems:
 - AB – systems acting on content: information retrieval systems, digital libraries, electronic publishing systems, etc.
- (3) People:
 - CA – people interacting with information content; and
 - CB – people interacting with information systems.
- (4) Organizations:
 - DA – content producing organizations;
 - DB – organizational information systems; and
 - DC – management.
- (5) Policy, planning and strategy.

The present paper analyzed the curricula at LIS departments around the world focusing on Wilson's "people" (C) foundation field, that is, it identified those courses which present a user-centred approach and deal with the ways users seek, search, use and learn about information as well as the services and applications developed by information professionals and providers with the purpose of fulfilling the information needs of users. In addition, the study tried to identify the ways in which the other four foundations fields interrelate with the central "people" field.

Aims

The purpose of this study was to present an evaluation of current trends in course curricula offered at LIS departments around the world focusing on the user-centred approach. In other words, the present study wanted to examine to what extent LIS departments have incorporated user-centred courses in their curricula that deal with the development of theories, applications and information services pertaining the organization and retrieval of socially-oriented information, the study of information needs and behavior and information literacy and to inquire into the social role of libraries.

Research procedures

The present is a qualitative study based on the grounded theory approach. The grounded theory approach was first formulated in 1967 by two sociologists Barney Glaser and Anselm Strauss who, contrary to the positivist orientation common in sociology at that time, held that theories should be "grounded" in the data collected in the field and not imposed by a set of predispositions brought about by the researcher. Hence, a grounded theory is one that is inductively derived from the study of the phenomenon it represents. One does not begin with a theory, and then prove it.

Rather, one begins with an area of study and what is relevant to that area is allowed to emerge (Strauss and Corbin, 1998). Categories and theories are built from the data extracted using the “constant comparative method” by which pre-defined units of information (i.e. words, phrases, sentences or whole paragraphs) are compared until categories are built and saturated (Miles, 1994). The pre-defined unit of information for this study was the course description found in the department’s web site which provided the necessary information to code each course into its respective category and represents the statement of intent of the each department.

Wilson’s (2001) typology served as a general theoretical framework that guided the coding process; although no data were forced into specific codes, all five foundation fields were represented in the sample. The interactions between the fields were unique and specific to this study. The information collected from the departments’ web sites was analyzed using the content-analysis method and then grouped under categories extracted from the data. The category scheme was built from the beginning of the analysis starting with the first curricula examined and the final scheme was reached by constantly comparing the data from each new curriculum to the existing scheme categories until categories were saturated.

The study analyzed the curricula of 30 LIS departments around the world listed at “World list of Departments and Schools of Information studies, Information Management, Information Systems, etc.” available at: <http://informationr.net/wl/> (accessed May 20, 2007). The departments included in the study were not randomly selected. Following Miles (1994) guidelines departments included in the sample were purposely chosen and the sampling was guided and delimited by three parameters that set boundaries and created a frame for the study. Departments included in the sample:

- were postgraduate programs, MLIS or diploma;
- defined themselves as library and/or information studies departments (LIS);
- provided detailed course descriptions in their web sites with enough information about courses to facilitate the data analysis; and
- provided curricula information in English, Spanish or Hebrew, which are the languages spoken by the researcher.

In order to get a world-wide perspective and taking into consideration the above mentioned limitations the sample included curricula from six departments from the USA, three from Canada, two from Great Britain, two from Mexico and one curriculum from the following countries: Singapore, Japan, India, New Zealand, Australia, Cuba, Chile, Argentina, Greece, Ireland, Norway, Finland, Spain, Poland, Malta, Nigeria and Israel.

There are two limitations to this study. First, the form of data collection and analysis used limits the scope of the study. By analyzing the course curricula as advertised in the departments’ web sites the study could only review general trends in LIS education and not the actual results of the programs in the field. Second, although the study aimed to include as extensive a sample as possible, the language skills of the researcher limited the curricula included in the sample to countries where English, Spanish or Hebrew are widely spoken. Despite these limitations, this study presents an innovative evaluation of current trends in LIS curricula, focusing on subjects related to the ways in which users interact with information and the ways information

professionals can improve this interaction. The results of this evaluation can assist in the development of LIS curricula in user-centred subjects.

The following section presents the categories found in the data analysis representing the interaction between the five fields.

Data analysis: the “people” foundation field

The analysis of the data extracted from the departments’ web sites and its subsequent codification into sub-fields rendered the categories shown in Table I. The order of the codes indicates the emphasis given to each element in the course description.

The analysis of the data collected from the departments’ web sites revealed that Wilson’s (2001) “people” subject field interacts with the other four fields in various ways. The category scheme that resulted from the analysis of the data contained eight categories as shown in Figure 1.

The eight categories in the category scheme are described in the following section alongside with examples from the sample (i.e. course descriptions) that emphasize these interactions. The first category (AC) represents the interaction between the information content (A) field and the people (C) field in courses that deal with the organization of information for a specific group of users and the services developed thereafter in the library:

- *Resources and services for young adults.* A study of literature and other media produced for young adults. Includes an introduction to adolescent psychology, lifestyles, and interests and how these impact young adults and their reading/viewing habits. Students will learn to evaluate and promote materials according to their various uses, both personal and curricular, and according to the needs of individual young adults (University of Buffalo).
- *Books and the information society.* The role of the book as written text, material object and cultural transaction in the contemporary information landscape, emphasizing descriptive bibliography, rare books and special collections, artefacts in the digital domain, communication and information design, and New Zealand print culture (Wellington University, New Zealand).
- *Young people: collection development.* Introduces students to a diverse range of materials produced for and created by young people from illustrated storybooks to webzines. Using a genre approach, emphasis is on the selection and evaluation of resources for collection development to support the multiple literacies of young people (University of Toronto).

The second category (ABCD) represents the interaction between four foundation fields: “information content” (A), “information systems” (B), “people” (C), and organizations (D). Course classified in this category are mostly introductory courses that address basic principles in LIS education:

- *The information environment.* Introduction to information science. Definition and properties of information, production, transfer, classification, formatting, evaluation and use. The role of information organizations, including print and electronic publishing, traditional and digital libraries, and archives (University of Albany).

Code	Name	Definition
AC	Information content organized to fulfil the information needs of a specific group of users	This category includes courses that emphasize the organization of information, organization that is planned around a specific group of users or courses that deal with the role of information content in the information society
ABCD	Information systems design for a specific population in a particular organization	This category represents the intersection between four foundation fields: content, systems, people and organization
BC	Principles of information system design based on human/system interaction	This category includes courses that emphasize the design of information systems taking into account elements of human interaction with the system
CA	People interacting with information content	This category includes courses that emphasize the users' interaction with organized information content; it covers topics such as information use, information literacy and reading
CAB	People interacting with information content and information systems and their role in the information society	This category includes courses that deal with issues involving three fields: the organization of information in information systems and the users' interaction with information content through information systems. In other words, this category includes courses dealing with information behavior in general, information seeking and searching, user studies and the use of formal and informal information channels
CAD	People interacting with information content in specific organizations	This category includes courses that emphasize the users' interaction with organized information content in a specific organization (i.e. type of library) as well as the roles and functions of information professional in a particular organization. It also covers users' issues in a specific library
CB	People interacting with information systems	This category includes courses emphasizing different elements of the human side on the computer/human interaction
EC	Policy, planning and strategy issues regarding users and information professionals	This category includes courses dealing with basic strategy, planning and policy making issues regarding information and users

Table I.

- *Introduction to information science.* Definitions of basic terminology; distinguishing information from communication, data, knowledge; Its role and value in society (local, national, global); origins and growth of information science; relationship to other disciplines; educational innovations; career prospects for information scientists (Univeristy of Ibadan).

The third category (BC) represents the interaction between the “information systems” (B) field and the “people” (C) field in courses that deal with principles of information

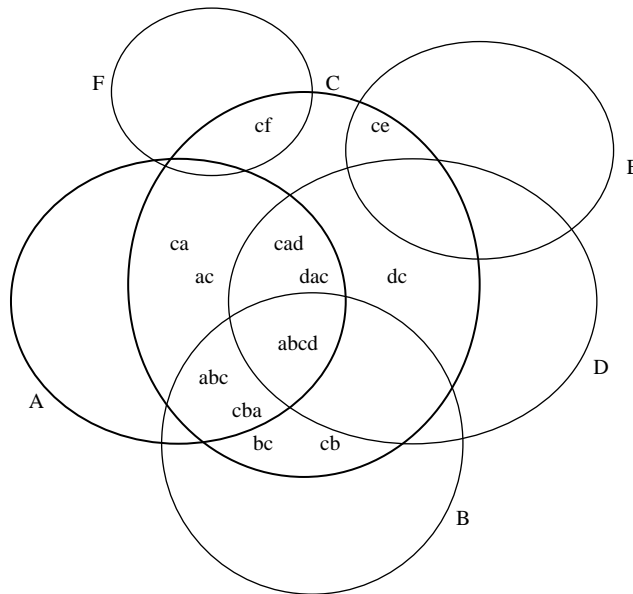


Figure 1.
Interactions between the
people foundation field
and the other four fields

system design based on human/system interaction. In this category, system design issues are emphasized:

- *Interacting with information systems.* Theoretical and practical aspects of the way that people accomplish information tasks - searching, browsing, exploring – using content-rich information systems. Three components: how people process information, how the interface is designed to support information tasks, and how to evaluate those interfaces. Emphasis is on design and assessment of interfaces (University of Toronto).
- *Information systems analysis, design and evaluation.* Basic concepts associated with information systems; general procedure for the development of an information system; user needs assessment; techniques for describing systems; development of design specifications, selection of hardware and software; other methods for implementing the system; determination of records structure; determination of search procedures; development of system-user interface; provision for backup; provision for evaluation of records, files, databases; techniques for evaluating systems (Ibadan University, Nigeria).

The fourth category (CA) represents the interaction between the “people” (C) field and the “information content” field (A) in courses that focus on the different aspects of the interaction of people with information content such as information use, information literacy and reading:

- *Information literacy research.* This unit aims to deepen understanding of the key research problems in information literacy and appropriate research methods for investigating those problems. Information literacy is an area of interest

internationally, with a growing literature and increasing focus on developing appropriate research methods for the subject. Students will learn about the research contexts and problems by engaging with the literature and with existing researchers, by presenting and debating key issues, and by carrying out an information literacy project. They will emerge with an increased understanding and capacity in information literacy and relevant research approaches (Sheffield University).

- *Young adult materials: evaluation and use.* An overview of materials reflecting adolescents' interest in media and addressing their educational, cultural, and recreational needs. Students evaluate print literature, electronic and other non-print media for young adults. Content also designed to assist adult caregivers of adolescents (Washington University, USA).
- *The art of storytelling.* Discover how oral storytelling told from the imaginative heart entertains us, enhances our critical thinking, and creates our culture, our beliefs and our identity. Learn how to listen to, research, choose, prepare and present your stories. Explore the role of storytelling in an age of print and information technologies (University of Western Toronto, Canada).

The fifth category (CAB) is an extension of the third category (CA) because like CA, it covers the users' interaction with information content but through an information system. In other words, this category includes courses that focus on information behavior of users, such as information seeking and searching that lead them to interact with information content organized in information systems:

- *Information seeking behaviors.* Information-seeking theories, methods, and user behaviors will be covered in order to gain an understanding of how different groups of people seek, gather and retrieve information in a variety of information environments. Information-seeking behavior draws on literature from library and information science, psychology, and communications (University of Arizona).
- *Introduction to information society issues.* The development of the concept of and the building of information society in Europe and in Poland: official documents, the actual state, prospects for further development. Scenarios (positive and negative) of society development. The history of the information revolution. The application of computer science in different spheres of life. The social reception of informatics. Technology at the service of education. Distance teaching. Transborder universities. Cyberculture. The library in information society. The role of libraries in the building of information society. Threats posed by internetworks. Copyright and intellectual property rights issues in a network (University of Wrocław).
- *Information users, sources and systems.* Uses of information; the information user: characteristics, contexts and environment, information needs, and user groups; information sources: formal and informal sources, primary and secondary sources, databases and databanks; Information dissemination and diffusion: publication cycle, scholarly communication, information gatekeepers, invisible colleges, theories of diffusion, etc; information seeking: behaviors, strategies and approaches, and factors influencing behavior; user studies: types,

application and evaluation; user education, sensitization and orientation: content, target groups, evaluation and management (University of Ibadan, Nigeria).

The sixth category (CAD) is a second extension of the third category (CA) because like CA it deals with people's interaction with information content but in specific organizations. This category includes courses that focus on the interaction of specific groups of users with information content and services at a specific library. In addition, it covers courses dealing with the roles and functions of information specialists at these organizations:

- *Public library services for youth.* Administration of youth departments in public libraries; planning and promoting programs and services; evaluation of library collections; community and professional roles of the youth librarian (University of Washington, USA).
- *The organization of school and teachers' libraries.* School, teachers' and public libraries for children - in the past and today. The legal basis of their activity. Operational functions and forms. Major educational information systems abroad. The ethics of the teacher-librarian profession. The school library's premises, budget and collections. Standards for school libraries (University of Wroclaw).
- *Early childhood and public libraries.* Examines the full range of abilities needed for working with preschoolers and their families and caregivers in today's public libraries. Provides theory, practice, and a framework for thinking about early childhood development and literacy (University of Pittsburg, USA).

The seventh category (CB) represents the second interaction between the "people" and the "information system" categories, with an emphasis on the "human-side" of the human/computer interaction:

- *The needs of electronic information users.* The needs of information users: information barriers, the librarian's role in breaking them down; methods of studying users' needs; electronic information user rights, restrictions and education. User communication with the system (including the development of user interfaces) (University of Wroclaw).
- *Information management.* Information management in learning organizations. Learning modes and the organizational learning cycle. Information needs and information seeking in organizations. Information management activities. Managing human, textual and online information resources. Information systems in organizations. Information sharing in organizations. Marketing of information products and services to organization's staff and stakeholders. Outsourcing of information management activities. Information auditing and management of information related projects (Nanyang Tech University, Singapore).

The eighth category (EC) represents the interaction between the Wilson's fifth field "policy, planning and strategy issues" and the "people's category. It includes courses dealing with policy and planning issues regarding both the users and the information professionals working at the library:

- *Equity of access.* The purpose of the course is to introduce students to issues involving equal access to information and technology particularly as it relates to Latinos and Native Americans and other minority groups. Students will examine information involving the digital divide (University of Arizona).
- *Marketing and public relations for information professionals.* Application of marketing and public relations concepts, processes, and tools in libraries and other information environments. This management course focuses on client-centred practices that help ensure library collections, services, and programs meet customer requirements. Teams will prepare and present an integrated marketing plan for a product in the information setting of their choice, from situational analysis to strategy development to promotional mix (University of Western Toronto).
- *Information ethics.* This course, designed for LIS and telecommunications students, deals with several current major issues in ethics in an information society. One principal feature is interaction with colloquium speakers of the annual SIS Dean's Forum on the ethics of information in society (University of Pittsburgh).

User-centred tracks

Of the 30 LIS departments included in the sample two departments stand out because they have explicit "user-centred" tracks of study. The first department is the "Library and Information Science" program at Oslo University College which offers a module of study called "Library and Society." The program's description declares that "it is a central aim for this group of subjects that the students shall develop ethical and critical reflection on the library's role as intermediary of culture and knowledge," available at: www.studie.hio.no/eng/ects/jli/lib/lib-03.htm#P151_23138 (accessed May 3, 2007), Torstensson (2002) in his paper, about the role of libraries in society in which he describes in detail this program of study, states that in order to achieve this goal students need to understand why libraries have been founded and the purposes for which libraries exist. The following course description of the program emphasizes this point:

Information and culture policy. The students shall acquire a theoretical and conceptual apparatus enabling them to perform a critical analysis of information-, culture- and knowledge policy-related issues, and to analyze the libraries' role in an information-, culture- and knowledge-political context. The students shall be acquainted with the information- and culture-political strategies which are being developed in Norway and in many other countries, and analyze these on the base of under-lying ideologies and conflict and power structures.

The Information Science Department at Bar-Ilan University is the other department that offers a user-centred module of study called "Social information" According to the department's web site, students in the social information track "are trained as highly-qualified community information professionals that are sensitive to the needs of the community and are able to exploit the social potential of digital and printed information." available at: www.is.biu.ac.il/pdfs/eng/dep.%20of%20%20information%20science-Bar-Ilan%20university%20Israel.pdf (accessed May 25, 2007). Bar-Ilan's program has a different approach from the program at

Oslo University College, it focuses on the improving the users' quality of life through information services while the program at Oslo University College centres on the library's role in the information society. The following course description of the program emphasizes this point:

Seminar on social information. The seminar will deal with subjects related to the location and analysis of the social and medical information needs of the population and to the development of institutions and projects that serve as providers of this type of information such as: social and medical information banks and self-help units of information.

Discussion

The rapid and far-reaching developments that have occurred in the last two decades in terms of the expansion of the information economy, the development of technological innovations, the creation of vast amounts of freely available digital information and the adoption of new delivery formats have resulted in dramatic changes in the character and the organization of libraries, in the nature of the work of information professionals and in the ways in which users interact with information. All these transformations have shifted the focus of the information world from the systems to the users both in the development of information technologies and tools and in the organization and delivery of information services.

The question before this study was to what extent LIS curricula have responded to these transformations by shifting to a more user-centred approach. For this purpose, curricula were evaluated by focusing on the people foundation field in Wilson's (2001) typology that includes subjects dealing with the interaction of users with information content and the provision of information services. As seen from the category scheme of the course descriptions presented in the previous section, the user-centred approach is embedded in the interactions between the people field and the other four fields proposed in Wilson's (2001) typology. These findings concur with the results reported in the Kaliper report by showing the incorporation of the user paradigm in LIS curricula in general that includes those traditionally system-centred courses such as cataloguing, data management and system design as well as courses dealing with information content design for a specific group of users or courses that analyze different elements of the interaction between users and information content such as literacy and information use. However, this interaction means that the essential information-oriented approach remains in LIS curricula while the focus on the user is more of a shift in approach rather than a radical change in the essence of the programs.

The focus on information-related subjects is affirmed by a second study that also applied Wilson's (2001) typology. Juznic and Badovinac's (2005) study presented a comparative analysis of LIS programs in Europe and found that only 5 percent of the courses in the programs included in the sample dealt with subjects related to Wilson's people category while 26 percent of the courses dealt with "content" issues, 22 percent of the courses dealt with "organizational" issues and 14 percent dealt with system's issues. Another study that investigated what constitute the core in LIS education and training in South Africa found that most of the people related subjects (i.e. various aspects of reading, interpersonal skills and user studies) were more suitable as electives (Raju, 2003).

The question to ask at this point is whether this “user-centredness” is enough in an era in which web 2.0 applications and tools are becoming the heart of the internet by allowing users to be full partners in the creation and management of the information content at their sites. Although, the answer to this question is not a simple one, some valid points can be raised by correlating the curricula evaluation performed in this study to a list of professional skills and competencies such as those recommended in SLA’s (2003) report on “Competencies for Information Professionals of the 21st Century.” Findings show that the curricula evaluated strongly support SLA’s professional competencies that relate to the information professional’s knowledge of information resources, access, technology and management. This group of competencies encompasses a wide variety of courses included in the sample:

- courses dealing with the organization of information content (AC) and with the interaction with users and content (CA);
- courses dealing with the development, design and marketing of information products and services (BC); and
- courses imparting management skills (DC).

However, the same cannot be said about the personal competencies proposed in SLA’s (2003) report. This group of competencies that make a central element of the user-centred approach, represent a set of attitudes, skills and values that enable information professionals to interact with clients and colleagues and become more proactive in their work. Contrary to the findings on professional competencies, the evaluation of the curricula does not show a strong support for the development of personal competencies or social skills such as efficient communication and negotiation skills and the development of a “team approach” based on collaboration and leadership skills. Courses aimed at developing personal or social skills would have classified under Wilson’s (2001) people (C) foundation field with no interaction with other fields. The absence of an independent people (C) category emphasizes the existing void in the curricula concerning the development of social skills.

Several studies discuss the need to strengthen the social skills of information professionals (Agada, 1994; Baruchson-Arbib and Bronstein, 2002; Jackson and Chey, 1997; Pellack, 2003). Scholars like Agada (1996) have recognized the need for the integration of social skills in library education which he regarded as central in emerging information and service-based economy. Agada believed that these skills allow the information professional to understand the processes by which clients make meaning of their environments by establishing a dialogue with them to elicit information on their needs and feedback on the impact of services on those needs. One can argue that, contrary to professional skills, personal or social skills are difficult to identify and measure. Nonetheless, it is important for LIS departments to be aware of this void and to develop areas of study that focus solely on strengthening their students’ social skills.

Conclusion

More than two decades ago, Colson (1980), in his essay about the education of librarians, asked two questions that are still relevant today. He asked what does a librarian needs to know and when does a librarian needs to know it? The present study showed that, LIS education is providing new answers to these questions. The

evolution in computers, communication technologies and digital content in the last two decades has had a dramatic impact both on users' information behavior and on the nature and character of the information profession. Through the use of Wilson's (2001) typology, the present study found that in most cases, LIS curricula have been successful in blending between the traditional approach to LIS education that aims at providing students with basic information handling skills and a user-centred approach that focuses on the information needs and behavior of users. In other words, although cataloguing, reference and bibliographic searching skills remain at the core of LIS education programs they now focused on the users and not on the systems. However, with the rapid technological changes we experience everyday and the increasing importance of social tools and applications there is a growing need to strengthen the user-centred approach of information work by developing the social skills of information professionals. Developing these skills will enable information professionals to fully understand the information needs and behavior of users and to organize information content and develop information services that empower users by allowing them to take part in the creation and management of information. To accomplish these goals, LIS education programs need to strengthen their user-centred focus by developing courses in their curricula that develop social and personal skills. They need to find new answers to the questions asked and maybe ask new questions that will help them educate the information professional of the future.

Recommendation for further research

Further, research is needed to fully understand how social skills and competencies can be developed at LIS education programs and how can these programs strengthen their user-centred approach. This is of particular importance because in the short time since the data collection for this study started web 2.0 has substantially increased in importance and use and it will be interesting to investigate how LIS education programs are integrating the use of these social tools into their curricula.

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