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Literacy concepts in the LIS curriculum

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Abstract:

This paper presents a general introduction to Information Literacy in the Library and Information Science (LIS) curricula in three different contexts - India, Europe, and the U.S.A. "Hot Initiatives" in India higher education are reviewed and are linked to the various Information Literacy initiatives in that country. Next, the European perspective is presented with a review of the literature of library involvement in Information Literacy in a range of European countries. An analysis of Information Literacy in U.S. LIS schools is based on nearly 30 years of research that indicated a significant trend towards inclusion of Information Literacy courses in LIS curricula.

INTRODUCTION

Three perspectives of Information Literacy in LIS curricula in three different areas of the world that are represented on the Education and Training Section of IFLA are presented in this paper. As a section of the Education and Research Division, we are pleased to present this paper as part of the session on Information Literacy in the Division's program. We are also anxious to learn about the role of Information Literacy in LIS Curricula in parts of the world not represented in this paper, especially from the perspective of South America and our host country, Argentina. The first perspective presented in this paper is from India, represented by Professor C.R. Karisiddappa. The second is Niels Ole Pors' European perspective, and the third will be the view from the United States presented by Terry Weech.

THE PERSPECTIVE FROM INDIA

In the Information Society, Information and Knowledge are the basic resources and access to them is a necessity. The central mission of higher education is to make objective efforts to develop life long learners. The present Information Society is a Learning Society. The ever changing life style, practices and fascinating changes that are taking place in all walks of life necessitates the incessant learning practice. Higher education in general and professional education in particular strive hard to ensure the enhancement of learners' intellectual abilities, reasoning and critical thinking power. It also endeavors to construct a framework for learning how to learn and thus providing a foundation for continued growth indicating learners their role as informed citizens and members of the community. Effective execution of this objective calls for promoting Information Literacy. Information Literacy is a key component and contributor to life long learning.

Information is available through libraries, community resources, special interest organizations, media and the Internet. Most often this information is reaching the user unfiltered. Questions about its authenticity, validity and reliability are often raised. Further it is available in multiple media, including graphical, aural, and textual which poses problems in evaluation. Uncertain quality and expanding quantity always creates problems and challenges for society. It should be noted that the abundance of information will not create informed citizenry without a complementary cluster of abilities to use information effectively.

WHAT IS INFORMATION LITERACY?

Information Literacy is defined in the ALA Presidential Committee on Information Literacy: Final Report, 1989, as a set of abilities requiring individuals to "recognize when information is needed, have ability to locate, evaluate and use effectively the needed information."

Information Literacy is becoming increasingly important in the present scenario of rapid proliferation of information sources. Because of the escalating complexity of this environment, individuals are faced with diverse and abundant information choices in their studies, workplace and their personal life. Information Literacy forms the basis for life long learning. It includes IT skill such as use of computers, software applications, information retrieval tools etc, IT skills have to be developed on a large scale due to the ever expanding Internet universe.

GROWING IMPORTANCE OF INFORMATION LITERACY

The proliferation of information with rapid speed and changing shape of the sources of information supported with the constantly changing technologies affects the understanding of everything around. Scholars have found that the traditional literacies of reading, writing and mathematical reasoning are insufficient for life long learning.^[1] The need to handle and use information is present in all stages of life and the acquisition of the competencies of information literacy must be intertwined with the acquisition of the other literacies.^[2] Teaching the students to become information literate calls for teachers to be a facilitator, instructor, coach and a guide. Teachers should teach to 'learn how to learn' allowing students to develop questions, strategies to search for answers and formulate to search for answers and formulate conclusions. This helps the students to be independent, self-directed and prepares for real-life problem solving.

Over the years consistent efforts are being made all over the world to underline the significance of Information Literacy in school curriculum. Looking at the American economic history, it is noted that the school curriculum was viewed as a means for passing down to the student all the skills necessary for effective citizenship. In the information society it is essential to formulate fertile ground to build critical thinking and problem solving skills along with competence in information literacy among students. Information Literacy concepts need to be developed in the context of school curriculum by appropriate restructuring and assessment so as to fulfill the mission of the education. There are set standards and norms to redesign the curriculum at all levels considering the available infrastructure. Information literacy augments student competency in evaluating, managing, and using information. Curriculum restructuring incorporating the everlasting teaching components is now seriously taken note of by the accrediting and assessment councils in many of the countries.

LITERACY CONCEPTS IN LIS CURRICULUM

Strategic planning in incorporating literacy concepts in Library and Information Science curriculum considering the different levels of education goes a long way in giving new direction and dimension to LIS Profession. Imparting of literacy skills requires the collaborative efforts of the faculty, librarians and some selected experts/specialists. Incorporation of literacy concepts in the LIS curriculum is not an extra addition on teaching and training, but it is intertwined into the curriculum structure, content and sequence. This kind of integration helps in many ways to influence learner-centered teaching methods such as problem based learning, evidence based learning and inquiry learning. These enable the learners to reason out course content at a deeper level than is possible through the exclusive use of lectures and text books. Further, it facilitates using thinking skills by the learners to become skilled users of information sources in many locations and formats thereby increasing their responsibility for their own learning.

INDIAN LIS CURRICULUM

The concept of Information Literacy is indeed an integral part of LIS curriculum in Indian education. The contemporary LIS curriculum in India and other Asian countries, apart from other components of practical training/coaching in information repackaging, is based on the most successful method of developing information literacy skills through resource based learning. Most of the LIS programmes have courses such as “Information Sources and Services” which is separate from courses giving the theoretical foundation of information. Much of the time in these courses is spent in coaching, instruction and developing self-directed learning as far as search techniques, skills and methods of assimilation and presentation of information is concerned. This resource based learning develops lifelong learning skills in the day-to-day activities of students understanding the importance of varieties of books, newspapers, databases, government documents and other information packages^[3]

Therefore there is a need for introducing the information literacy components and integrating them with the curriculum in all stages and levels of learning. Moreover in the contemporary context changes are constantly taking place in every walk of life and employees are expected to keep up with rapid technological advances, to streamline operations and to possess the ability to be proactive problem solvers. Information literacy helps them to keep up-to-date in the job and prepare for self-improvement and upgrading of skills.

INFORMATION LITERACY: LIBRARY INITIATION

Real conceptualization of Information Literacy and its relationship to lifelong learning is done by librarians in the early 1970's itself. This paved the way to focus on the future role of libraries and librarians in helping with the use and application of information.^[4] In the process librarians as information specialists need to initiate their traditional ‘user education’ programme with a new perspective. Several ways and means of developing the typology of conducting ‘user education’ are being incorporated in the Indian LIS Curriculum.

HOT INITIATIVES IN INDIAN HIGHER EDUCATION

Higher Education in India is constantly shaped and reshaped to cope with a changing scenario. With present day developments in globalization, liberalization and privatization, higher education is slanting more towards commercialization in which competition has become inevitable. As a result the Indian Government has already initiated quality improvements programmes. Accreditation and assessment of academic and professional institutions is mandatory and going on war footing. In the meantime there are hot initiatives like recognition of centers of excellence (college and universities), autonomous colleges, deemed universities and institutions of national importance. This initiation has paved the way for a renewed outlook with technological orientations like networking, consortia mode of sharing resources, curriculum revision, starting of work-based and skill-based job oriented programmes. Further active collaboration and linkage in promoting R&D activities are visible. It is envisaged that the time is ripe in India for developing a campus culture and an Information Literacy culture. It is an urgent that the Information Literacy programmes be incorporated into the higher education curriculum. There is a healthy trend wherein library professionals are moving into the classrooms to teach the access and use of information.

NATIONAL CURRICULUM FOR LIS EDUCATION

In India recently a national committee of experts including practitioners, teachers and scientists made an outstanding effort in designing the National Curriculum for LIS Education. This committee was appointed by University Grants Commission (UGC), Government of

India. The committee with very practical and feasible approach, keeping in view the contemporary developments in the job market and examining the existing curriculum in developing countries has developed a modular curriculum, which suits the different levels of education in LIS.

Further 60% of the course components are taught by conducting practical sessions in which in addition to giving the hands on experience, assignment, seminar presentations and demonstrations by the LIS students are a compulsory component in the curriculum.

The special features of this UGC model curriculum (Library and Information Science) has clearly stated objectives for each module, unitized syllabi, special instructions to emphasize the theoretical and practical aspects and indicates the implied concepts of information literacy in LIS Curriculum. ^[5]

CONCLUSION ON PERSPECTIVE FROM INDIA

Overloading of electronic gadgets in the schools, colleges, homes and offices is a common phenomenon even in developing countries today. There are numerous ways of providing information and in the process prepare users for the onslaught of the information so as to judge the reliability and credibility of the information. Therefore there is an imperative need for not only developing reading skills and computer skills but also information skills.

Information Literacy is also a broader area of competence that encompasses the content, analysis and communication of information which is an area of focus for information professionals. Information Literacy instruction must present the political, social, economic and cultural context in which knowledge is created and organized. To be information literate an individual must also be empowered to create knowledge and challenge dominant ideas when necessary. An information literate person needs to be aware of the obligation as a citizen in a democracy to make their voice heard, as well as critically critique existing knowledge and information. This becomes more relevant in a developing country like India, where it is unusual to believe the successful survival of democracy in a much more exemplary way.

Academic institutions these days have many mission and vision statements. In addition to several developmental and healthy plans and programmes, stated therein, the Information Literacy initiative is also represented, because, it is the sure way to bring out the self-directed, life long learners as citizens for the Information Age. Information literacy occurs at the intersection of teaching, thinking and learning, within the broader environment of technology.

India as a developing country in Asia has all the characteristic features of being a part of Knowledge Society and our honored leaders are dreaming to develop India a Knowledge Super Power by 2020. To achieve this goal, it is essential on the part of the governments to prepare a workable strategy to spread the cause of Information Literacy and encourage all institutions to incorporate the literacy concepts in the different levels of education.

Over the past three decades, the author is having varied experience of teaching, evaluation and designing the curriculum at various levels of education. In addition, the author has been the convener of the Curriculum Development Committee (LIS) of the UGC. Therefore, it is the firm conviction of the author that the literacy components in LIS Curriculum will enable the LIS students to master the skills and expertise of carrying it forward to educate and train the user community in optimum utilization of the information for development.

A EUROPEAN PERSPECTIVE

The concept of Information literacy has come on the agenda of the library and information science and service profession. Like many concepts, it signifies very diverse meanings and perspectives for different people. The definitions of information literacy reach from being a simple extension of user education to a meta-competence for learning activities. This meta-competence includes research skill, evaluative skills and a general ability to navigate in the chaotic information world^[6]

However, independent of the way the concept is defined, information literacy and teaching information literacy has become a buzzword in the circles of librarians.

It is evident that the concept attracts librarians working both in public libraries and librarians working in libraries affiliated to educational institutions. The public librarians see information literacy skills and teaching of them as a very central part of lifelong learning and a core issue in the democratic process. Librarians working in educational settings see information literacy as an important and integrated part of the academic learning process.

It is a difficult task to characterise the European library scene. The development of libraries has taken very different forms and the national support is also very diversified. Several reports point to the uneven development of libraries in Europe.^[7] These reports focus mainly on the public library scene but the development in other library sectors are probably diversified as well.

There is a very clear correlation between the existence of a national formulated information policy with emphasis on the role of libraries and the degree of development in the library sectors. The NAPLE – report gives an overview of the European situation.^[7]

A national information policy can be an important tool in the emphasis of the learning role of the libraries. It can form a frame of reference for institutional cooperation.

In 2003, a special issue of the journal *Library Review*^[8] was published with focus on information literacy in Europe. The issue contained 6 papers. Three of the papers report cover the Scandinavian countries. Spain, the Netherlands and Germany are also part of the issue. The different papers give a broad overview of information literacy problems and issues from a European perspective.

The different papers document a rapidly growing interest in the broad topic of information literacy. It is evident from the Scandinavian cases, that the national interest in information society witnessed by different strategic plans facilitates the activity. One of the interesting features of information literacy activities in the Scandinavian countries is that both public libraries and libraries connected to educational institutions have focused on the issue. For example, all public libraries in Denmark have the obligation to provide citizens' with access to the Internet. Overall, the situation is similar in the other Scandinavian countries. It is normal for public libraries to run introductory courses in surfing the net for both young people and for senior citizens. Most of this teaching is done free of charge. The teaching and the activities are conducted on the basis of beliefs in equal access to information as part of a democratic tradition. There exists a fear of the digital divide.^[9] All the Scandinavian countries have implemented different forms of strategic plans for the information society emphasising the role of the different libraries at educational institutions^[10].

One phenomenon is, of course, the national visions and strategies. They are probably a necessary prerequisite for a full-blown palette of activities covering information literacy. Another phenomenon is the implementation of the activities. Skov & Skaerbaek gives numerous examples of teaching of information literacy in Denmark and points to some problems relating to the cooperation between the libraries and the educational institutions.^[11] They focus on some interesting problems. One of the problems is the simple fact, that even if

all the players in the field verbally commit themselves to teaching information literacy there is still a long way to get it implemented in practice. This is partly due to traditions, ignorance and lack of resources. However, they advocate teaching of information literacy in relation to problem-based learning and gives examples of successful endeavours. They also point to the complex issue of getting information literacy activities incorporated in a curriculum. The situation in the Netherlands seems to be very similar to the Scandinavian situation.^[12]

We see similar problems in other European countries. It is obvious that both German and Spanish libraries have a much harder battle to fight than their Scandinavian counterparts due a lesser degree of national commitment.^[13, 14] The authors give good examples of how far the library system can move an issue through hard and dedicated work.

In general, we see much sympathy for the issue of information literacy. The main problem is the gap between the national strategies and visions – if any – and the activities in libraries and educational institutions. In many of the papers mentioned earlier, the authors emphasise that activities related to information literacy in most cases are financed without extra financial funding. This makes it extremely important to initiate the activity in a manner that increases the probability of success

It is important for librarians and information professionals to be aware of the relationship between the library and its institutional context. This relationship is important if a library decides to engage in teaching information literacy.

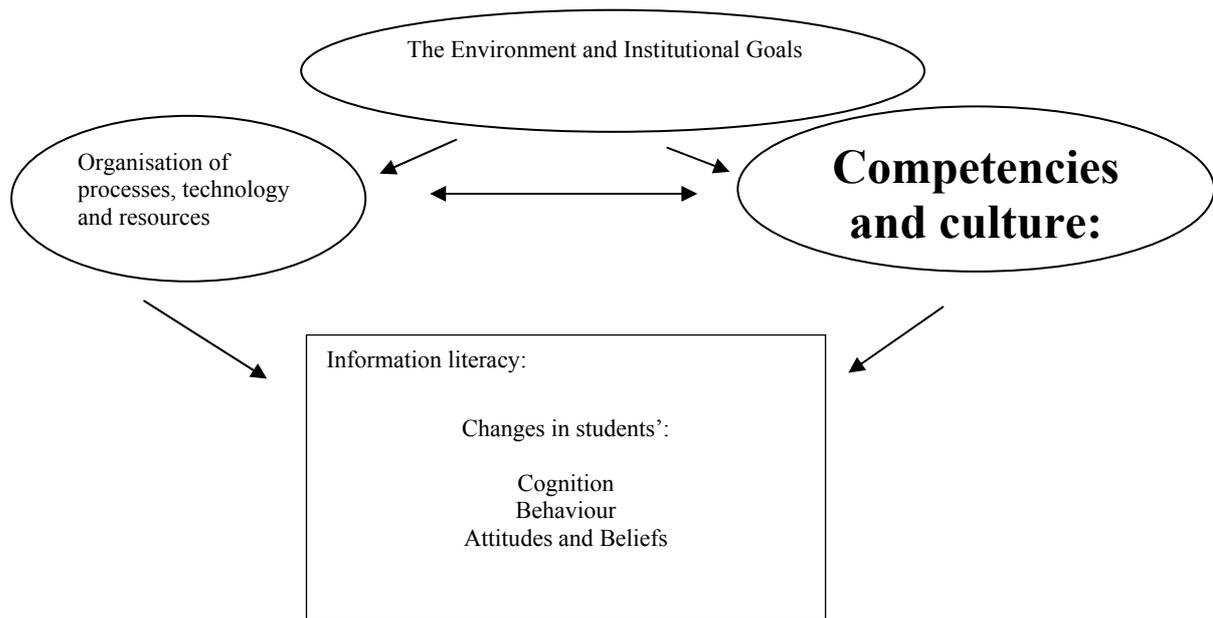
The relations can be very different. At one end of the spectrum the relationship between the library and its mother institution can be characterised by open and mutual hostility. In the middle of the spectrum we can witness a relationship characterised by mutual indifference and politeness. The two systems work independently of each other without much professional contact. At the other end, we can see a relationship characterised by willingness to cooperate, mutual understanding and a forming of partnerships based on the philosophy of mutual interdependency in relation to the learning process.

A successful teaching of information literacy requires a smooth cooperation with benefits for all involved. The benefits have to be noticeable. We find that it is extremely important for the library to conduct a clear and unbiased evaluation of the relationship with the mother institution. This analysis is of paramount importance planning the teaching of information literacy.

One thing is to initiate teaching of information literacy. Another is to assess the success of the activity.

The model below offers different perspectives on measuring information literacy. It is evident that we have to work with at least two levels. The first level is the organisational context in which the teaching is embedded. The other level is the individual level with the student or the learner in focus. The model is heuristic and it is useful for identifying issues one wants to assess and evaluate.

Figure 1. The context for teaching information literacy



The model is heuristic which means that its use is identifying strength and weaknesses in the library, in its relationship with a mother institution and of course also in relation to the students or learners. The model implies that the management of a library thinking about embarking in information literacy activities should ask several questions, among others:

- Is the library a part of the institutional goals of the mother institution?
- Is information literacy activities part of the curricular goals of the different departments?
- Has the library the expertise and status that makes it an attractive partner?
- Has the library the expertise to play the role of an equal partner in educational activities or is the aim just to highlight the support function?
- Has the library the necessary equipment like IT, computers, web-sites and the like to teach students?
- Is the staff at the library committed and competent?
- Is the library really student centred in all respects?
- What exactly do we want to change in the students' cognition, behaviour and attitudes?
- Is the library competent to measure the value of its activities?

These are just a sample of questions we feel are important to ask and answer in relation to information literacy activities.

An important question in this context is to which degree the library schools all over Europe give their students qualifications and competences to go out and teach information literacy and to establish the activity. A glance through a selection of European LIS – schools web-pages reveals that the concept of information literacy overall has not made its way into the curricular structure of schools as part of a compulsory component of the programme. Some schools, for example the Danish one, has just established modules covering the topic “libraries and learning” as a substantial part of a master degree directed towards professionals

at work. The topic is also a part of the elective module system both here and in other schools. This does not imply that the LIS – schools tend to overlook the area. It is still a hot topic in relation to Master-theses, PhD-theses and other forms of research projects.^[14] It should be added that many of the components of information literacy are part of the traditional curriculum.

On the other hand, it is evident that the topic is very “hot” in continuing education activities in the form of short courses. The situation concerning the organisation of continuing education activities differ very much In the European countries. In many countries, the professional associations play a vital role. This is the case in United Kingdom, and it is noteworthy that the web – page of CILIP (www.cilip.org.uk) displays courses in information literacy in a prominent place. This is also the case in other countries.

THE PERSPECTIVE FROM THE UNITED STATES

I will not restate what my colleagues have already said about the various definitions of "literacy" that exist. A similar range of definitions can be found in the United States. I will present my perspective from the United States based on a review of prior research in the area of "information literacy" as a subset of the "literacy" concepts that exist in LIS curricula in the U.S. This perspective is based on my own personal experience with "information literacy" courses at my school and on updating some of the prior research to compare the findings today with that done nearly six years ago. For purposes of this perspective, I have defined "information literacy" courses as courses that are concerned primarily with the development of instructional strategies and tools in libraries to assist users in the use of the library or in retrieving information from both traditional and electronic information sources accessed in the library or elsewhere. I realize this is a narrower definition that many use, but it is a definition consistent with the prior research I found on the teaching of information literacy in Library and Information Science (LIS) education in the United States.

STUDIES OF INFORMATION LITERACY COURSES IN LIS CURRICULA IN U.S.

Seven prior studies were identified on the availability of courses dealing with information literacy, as defined above, in the United States.^[15] According to these prior studies, these courses were listed as "library instruction," "bibliographic instruction," "user education" and other similar terms. The term "information literacy" was not used in any of the titles of the prior research, the most recent of which was published in 1999, reflecting the slowness of adopting the more recent terminology in LIS education. Westbrook's article reports a trend occurring over the thirty year period of the prior surveys showing an increasing proportion of LIS schools making courses on information literacy (user education) available, from only 5% to 7% in the 1970s to 54 percent of the ALA accredited programs in 1998.^[16] In May of 2004 the websites of the 22 schools Westbrook had identified in 1998 as not having courses on information literacy (user education) were examined again and it was determined that all but five schools now have courses on information literacy in their course catalogs based on web sources. The five not listing such courses (Clark Atlanta, Oklahoma, Pittsburgh, North Texas, and the University of Wisconsin at Madison) may offer information literacy courses under "special topics" headings, but the catalog listing on the web did not suggest such courses in these five cases. In fact, the research done for this paper used not only the web based course catalogs, but other sources such as the Association of College and research Libraries Instruction Section's web list of "Library Instruction Courses offered by Accredited Master's Programs in Library and Information Studies." Using the same 48 libraries that Westbrook used in 1998 and assuming that the those schools offering such

courses in 1998 are still offering these courses, the proportion of ALA accredited LIS education programs having courses on information literacy (user education) is now well past the half-way mark and stands at 90% of all U.S. LIS schools.^[17] Table 1 presents a summary of the prior studies, including the results of the study did for this paper.

Table 1: Studies of Information Literacy (User Education) Courses Available

Year	Author	# of Schools	# of Courses	Proportion
1976	Galloway	55	4	7%
1978	Dyer	63	3	5%
1980	Pastine & Seibert	100	11	11%
1983	Larson & Meitzer	67	15	22%
1992	Bruce	50	9	18%
1996	Sullivan	48	19	40%
1998	Westbrook	48	26	54%
2004	Weech	48	43	90%

From: Westbrook, Lynn (1999) - Passing the halfway mark, LIS curricula incorporating user education courses. *Journal of Education for Library and Information Science*. Vol 40 (Spring, 1999) p 94-95 and from 2004 Study done for this paper.

Thus there has been a considerable increase in the number of courses listed in the web catalogs of the 48 accredited LIS schools in the past six years. Even the most recent result of 90% may be low since as noted in prior studies, the difficulty of determining the content of courses from the titles listed in course catalogs may lead to an undercount. While "information literacy" was used in the course title in only a few cases, there was not one title or group of terms that seemed to be representative of the majority of course listings. "Library instruction," instructional strategies," "instructional services," and "user education," were among the most common. But the descriptions all shared the content of preparing the student to provide education on access to information resources to the library user.

THE UNIVERSITY OF ILLINOIS EXPERIENCE

The increase in the number of schools offering courses in information literacy (user education) undoubtedly reflects increased student and employer demand for user education skills. At the University of Illinois Graduate School of Library and Information Science the enrollment in courses about user education have gone from a small class of fewer than ten students some twenty years ago when the course was first offered to an average enrollment of over fifty students in multiple sections of instruction in 2003. Based on the advising of graduate students planning to working in academic and public libraries, the demand for the course comes in large part from the review of job descriptions that list user education and information literacy as part of the desired or required skills of new hires. In reviewing the number of students taking the information literacy (user education) course at the University of Illinois during the past three years, from 35 to 62 students have enrolled each year in the multiple sections of the course.

AREAS FOR FURTHER STUDY

Perhaps one of the more pressing areas of study is concerned with the various definitions of "Information Literacy" that exist in our field and how LIS education is adapting to changes of focus in information literacy in the profession. For example, at the University of Illinois we have a course titled "Instruction and Assistance Systems" in our professional degree program for the ALA accredited master's degree. This course was originally titled "Library Use Instruction" but adopted the revised name about six years ago to reflect impact of the electronic environment. It is interesting that Westbrook listed the University of Illinois as not having a course on library use instruction based on her review of the course catalog on the web. In fact, the University of Illinois has had a course on Library Use Instruction for over 20 years, but in 1998 it was listed under a special topics course and was not recognized as an information literacy course. An inspection of the syllabus, however, would have revealed readings and assignments relating to information literacy and would have definitely qualified Illinois as offering the course in 1998.

The challenge of the validity of research results when based on web course catalog information becomes evident from reviewing the course titles at the Graduate School of Library and Information Science at the University of Illinois. Illinois has a course titled "Literacy in the Information Age." This course is the capstone course for our undergraduate minor in Information Technology Studies. While graduate students may take the course with the instructor's permission, it is designed for undergraduates and is specifically targeted to non-professional students. The content explores "...what it means to be information literate in today's world." and has a social and cultural studies approach to the issues raised.^[18] But given that it is a course in the LIS course catalog of an ALA accredited school, one might assume from the title, without looking at the syllabus in detail, that it would be a course concerned with information literacy for the professional librarian. That is not the case, of course. So an examination of syllabi as well as interviews with faculty who teach the courses may be necessary to validate the results of any study of the extent of offerings in LIS Schools of courses on information literacy that are directed at those who plan to educate library users in information literacy skills.

In the United States, at least, the question may arise as to whether information literacy courses are better taught in LIS schools or in schools of education. Some of the information literacy course syllabi, including that of the course taught at the University of Illinois, are very explicit about the fact that the course is more of an education and human resource management course than a library and information science course. If that is the case, is it more appropriate to have it taught externally to LIS schools?

The role of continuing education, workshops, and instruction by library practitioners rather than by LIS faculty is another issue that seems to underlie some of the literature and practices in the field. One of the more successful conference events in the area of library information literacy is the annual Library Orientation Exchange (LOEX) conference. LOEX is a not for profit organization that has played an important role in providing librarians with resources and continuing education opportunities long before many LIS schools became involved with adding courses to their professional degree curriculum. Information on LOEX can be found at: <http://www.emich.edu/public/loex/loex.html> LOEX has been in existence for over 30 years and seems to have adapted well as the terminology and focus of information literacy has changed over the decades. Another group is the National Forum on Information Literacy (<http://www.infolit.org/>) which is more of an organization of organizations promoting a very broad definition of "information literacy." The National Forum has been in existence since 1990 and seems to function as a coordinating body among the member groups. Their membership ranges from the American Library Association to the Discovery Channel. Several LIS schools are members, as are a number of government agencies. The

National Forum's vision of information literacy seems much broader than that of LOEX and the vision of many of the courses on information literacy found in LIS curricula. But at present in the United States there seems to be no one direction or interpretation of information literacy taken by either the individual LIS schools as reflected in their curricula.

CONCLUSIONS

My review of the curricular listings and the prior research on information literacy in the United States leads me to conclude that we may be at a crucial point for determining LIS education role as a leader in research and teaching of information literacy. Up to now, the practitioners and others in the larger world of education and training have taken much of the lead though organizations such as LOEX. Will LIS education participate in the planning for information literacy in the 21st century or will the professional practitioners and faculty outside LIS take the leadership in defining information literacy for the 21st century? In the three meetings held in 2003 of the National Forum for Information Literacy, none of the Forum members representing LIS education were listed in attendance.^[19] That is not an encouraging indicator of LIS education's potential role in planning the future development of information literacy in the profession of librarianship.

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