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Abstract

Library and Information Science as an integrated field has great potential for addressing some of the most pressing problems of the global information society. The challenges of crossing boundaries to merge these allied fields into one have been considerable with library studies grounded in the humanities and culture and information science in mathematics and physics. By finding common ground centering on the user, library and information science encompasses broad perspective and expertise that no other field can offer.

This presentation will discuss challenges the field has faced over the past fifty years of crossing boundaries between library studies and information science, with an overview of the broad range of theory, research and practice that forms the foundation of the unified field. Substantial work in progress is discussed with examples of productive integrated initiatives such as cross-generational applications and user studies/information retrieval collaboration. Work emphasizing contexts and concepts has encouraged crossing national boundaries has resulted in developing relationships, partnerships and friendships that is building the international field of library and information science.

Introduction

Library and Information Science as an integrated field has great potential for addressing some of the most pressing problems of the global information society. The field has developed by crossing boundaries of two distinct fields of study and practice, library studies and information science, each with a different theoretical foundation and orientation. Library studies is based in humanities and social sciences and Information science is based in science and mathematics. This difference in foundation and orientation has resulted in tension as the fields have come together and the challenges of crossing boundaries to merge these related fields into one have been considerable. However it is this diverse foundation and orientation that comprises the strength of the field of Library and Information Science.

Some boundary crossing struggles we have experienced in bringing these two fields together still linger today. However, when we reflect on the difference in orientation, content and goals of the two branches of the field we can appreciate the
strength of the merged field. The foundation of library studies originated in the earliest civilizations with the development of contained collections to address the problem of access to limited sources. Methods of classification and cataloging, indexing and abstracting were invented to provide access to these collections. Library studies has devised sophisticated solutions to problems of selection, acquisition, description, and circulation of sources to provide physical access. Information science, a more recent field, emerged in the 20th Century with the development of the computer. Information science has addressed problems of storage and retrieval centering on issues of relevance and applying concepts of precision and recall. Information science with its scientific orientation has emphasized system design and entrepreneurial goals. Library studies with its cultural orientation has emphasized public service and institutional goals. Different orientation and goals have fostered different research questions and methodology. For the most part, library studies has sought to evaluate collections and has applied survey, interview, and case study in a situational framework. Information science has sought to measure systems and has applied calculus, algorithms, and statistics in an experimental framework.

Although library and information science has been operating as one field since the 1970s, particularly in academic departments, technological advancements of the last decade have unified the field. By the 1990’s libraries were engulfed by technology. The goal of providing access to limited sources through a contained collection was no longer the primary concern. Now the problem was to provide access in an environment of abundant sources that moved rapidly to an overabundance of sources. Developments such as the internet, digital libraries, and online catalogs have fostered problems of mutual concern to both branches of the field. Advances in information technology diminished the division within the field and solidified the two fields of library studies and information science into one dynamic broad ranging field of library and information science. This keynote, crossing boundaries: challenges for library and information science, will discuss some work in progress of productive integrated initiatives of the field and suggest some areas for future work.

What is Specific to Library and Information Science?

Library and information science has drawn its strength from crossing boundaries both within the respective fields and with other fields. Boundary crossing is a natural and healthy characteristic. However, it is important clearly to define the framework for our field so that we have criteria for determining what is uniquely our area of responsibility for research and practice. The question for library and information science is what underlies this field that makes it unique from other fields. What is specific to library and information science that other fields do not address? While the global information environment has had an impact on most fields, ours has a distinct concern that differentiates us from other fields. Library and information science is concerned primarily with information seeking and use, information access and provision. With this in mind library and information science is positioned to address a wide range of problems of the technological information age that no other field systematically addresses or consistently solves.
For example, computer science, a closely allied field is concerned with information delivery but centers on the system with a mechanistic perspective emphasizing what the system can do. The common problem of the under use of an innovative, speedy new system is that it does not match what the user wants to do or the way the user needs to do it. Library and information science takes a user perspective of system use particularly as it relates to information access. In the US it is not unusual for computer scientists attracted by our user-centered focus to apply for positions in departments of library and information science.

Management is another field closely allied with library and information science but management addresses the wide range of problems of an organization. Library and information science concentrates on those aspects in an organization that relate to information seeking and use. It may be tempting to cross the boundary into general management concerns but when we do we miss the opportunity to contribute in our specific area of expertise that concentrate on problems of information provision that the field of management does not address.

Library and information science is concerned with social and psychological states within the context of information provision. Library and information science is not responsible for social and psychological services but for information services and systems that address social and psychological aspects of information seeking and use. The administrators of a town near where I live have recently proposed that the library be responsible for a day care center. It may be tempting to go along with such a proposal but at what cost to the library services to that community. These may sound like fine lines of distinction but they are essential to make in order to concentrate on the unique and otherwise unmet contribution of library and information science. The contribution of library and information science is focused on the user in the context of information seeking and use, information access and provision.

Common Ground for Addressing Physical Access and Intellectual Access

By finding common ground centering on the user, the combined field of library and information science encompasses a broad perspective and expertise that no other field can offer. The basic foundations of library and information science are critically needed for addressing pressing problems of physical access and intellectual access prompted by digital information technology. Principles of classification, filtering, preserving, selecting, storage and retrieval need to be applied to improve physical access. Basic concepts in library and information science also are needed for addressing important problems of intellectual access. Concepts of cognitive and affective aspects of information seeking, usefulness and meaning within a constructive process, content within context are important concerns for accommodating individual and group collaborative information seeking in a community of practice.
Conceptual Framework for Library and Information Science

For many years library and information science has crossed boundaries to borrow theory from other fields. We are moving from a borrowed theory mentality to a conceptual framework for library and information science that has been tested, refined and adapted specifically for application in our field. This conceptual framework is beginning to be used by other fields to explain and predict information seeking behavior in many areas of human endeavor. The conceptual framework of the field has been developing rapidly during the past ten years. A number of models of information seeking behavior are well established as described in Donald Case’s new book, “Looking for Information: A Survey of Research on Information Seeking, Needs, and Behavior.” The central concept of relevance has been extensively researched with insightful findings particularly regarding topicality and partial relevance. The concept of uncertainty has been reintroduced and expanded both from a system perspective of measurement of what the system can deliver and a user perspective of experience in the process of information seeking and use. The concept of process has developed based in Taylor’s levels of information need, Belkin’s anomalous state of knowledge and the stages of the Information Search Process in my own work. The concept of task and complexity has emerged as a central issue as Bystrom and Ingwersen among many others including myself have studied. Information goals as described by Limburg and information intents in the work of Todd are important developing concepts. The conceptual framework of library and information science has a substantive foundation, yet it continues to expand in a defining, refining cycle, to explain, predict and respond to the dynamic information environment.

Research and Practice Cycle

For library and information science the challenge of crossing boundaries of research and practice is extremely important. The research of the field has much to offer the practice of libraries and information services and systems. It has been gratifying to see my own work on a process approach to library and information services applied in numerous settings with positive results. The ISP model has had considerable impact on services but relatively little impact on system design although this application is increasing. One example is the Aalborg University Library in Denmark that has developed a multimedia program for user education using streaming media to guide students in the information search process as an integrated cognitive activity in their learning process. The project is called SWIM (Streaming Web-based Information Modules). More work needs to be done to draw user studies and information retrieval more closely together. Leading in this area is Pertti Vakkari’s research on subject access through the information search process. Trends toward using naturalistic and longitudinal methods to capture the user’s perspective and combining quantitative and qualitative methods promise to have significant results to further the advancement of library and information services and systems. It is important to keep the boundaries of research and practice fluid with professionals informing researchers of what works and what doesn’t work in actual practice and of course, researchers informing practitioners of their theories and findings.
Educating the Next Generation

Crossing boundaries of generations is also essential in order to pass on the principles of the field and to attract a new generation of researchers and practitioners to continue innovative development of the field. A major challenge for library and information science is to prepare the next generation of professionals for work in the digital information environment. How do we educate professionals for library and information science work? To address this issue the Rutgers faculty initiated a new master’s curriculum in 2000. In response to the issue of what is uniquely library and information science the faculty devised a curriculum around six themes: human-computer interaction, information access, information and society, information systems, management, and organization of information. We had found that the type of libraries and the age users are is not nearly so important a distinction as previously thought. Many issues that school libraries are facing are similar to those in other special libraries. The impact of digital libraries on academic libraries is not unlike the pressures on corporate libraries. We are finding that all library and information professionals need a broad basic education in the principles and concepts of the field as well as high-level technology competency with a few specialization courses that emphasize application in particular environments.

Crossing International Boundaries

Library and information science is an international field. Crossing the geographical boundaries of countries is not new to us. Recently some interesting international initiatives have developed, such as ISIC – Information Seeking In Context, COLIS – Concepts Of Library and Information Science, and LIDA – Libraries In a Digital Age. These special interest groups are a healthy indication of the innovative growth that is taking place within the field. The benefits of crossing international boundaries have resulted in ongoing relationships, partnerships and friendships that sustain the work of the field. International seminars such as this one in Boras provide a rich exchange of ideas. At Rutgers we are establishing a Center for International Scholarship in School Libraries called CISSL to provide a global clearinghouse for research and consultation to address the complexities of educating students for the information society.

The Unique Contribution of Library and Information Science

Meeting the challenge of crossing boundaries has enriched the library and information science field and will continue to do so in the future. By being alert to innovation, concepts, and opportunities outside our field while keeping our attention on our unique expertise of information provision and access, information seeking and use, library and information science is positioned to meaningfully address problems of the technological information age.
References


