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The implications of knowledge management for library and information science education

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Abstract

Knowledge Management (KM) is a holistic, multi-dimensional discipline which overlaps with a number of other disciplines, including Library and Information Science (LIS). As it has emerged as a crucial competency requirement for organisations during the last two decades, considerable interest has built up in the subject of education for knowledge management. However, the diverse backgrounds and perspectives of the multiple groups involved, along with a complex range of knowledge management principles and practices has demanded educational responses that are both domain specific and at least to some extent, generic, with consequent challenges to both educators and practitioners of knowledge management. This paper looks at current developments in knowledge management education for the LIS profession. It is based on a research project at RMIT University that aims to clarify the state-of-the-art of knowledge management education within the context of Library and Information Science schools.

Keywords

Knowledge management, Library and Information Science (LIS), Education

Glossary

ALIA:	Australian Library and Information Association.
ALISE:	Association for Library and Information Science Education.
ASIS & T:	The American Society for Information Science and Technology.
ASIS & T SIGKM- L:	(ASIS&T) Special Interest Group on Knowledge Management (SIG-KM) Discussion List.
CILIP:	The Chartered Institute of Library and Information Professionals.
CILIP LIS- EDU: (CILIP)	Education Librarians Group Discussion List.
IFLA:	The International Federation of Library Associations and Institutions.
IFLA KMDG- L :	(IFLA) Knowledge Management Section Mailing List.
JESSE:	A listserv discussion group on library and information science education issues; moderated by Dr. Gretchen Whitney of the University of Tennessee, School of Information Sciences.
SLA:	Special Libraries Association

Introduction

The library and information science discipline, as the art and science of relating information resources to users, has undergone almost continuous change for decades, some of it dictated by advances in technology and some owing to social, economic and organisational developments. The advent of the Internet and subsequent technological developments within the information industry has transformed the nature and range of library products and services. The familiar phenomenon of information overload has attained new heights, with

instant and unrelenting resource implications for the LIS professions, not least in the fields of education and training. Concurrent with such developments, which include the commoditisation not only of technology, but also of many LIS products and services, has emerged the phenomenon of knowledge management. Debate continues as to the nature and meaning of knowledge management, with leading professionals alluding to the possibility of its being an oxymoron (Broadbent, 1998) and even more critically dismissing it as nonsense (Wilson, 2002). Others have been more positive, arguing for an expansion of LIS skills in information management into the knowledge management domain (Southon and Todd, 1999) and calling for the full engagement of the LIS professions in order to take advantage of emerging opportunities (Loughridge, 1999; Butler, 2000; Abell & Oxbrow, 2001; Davenport, 2004; Koenig, 2004, 2005; Martin, Hazeri and Sarrafzadeh, 2006).

The core construct: knowledge management

It is not hard to see why people continue to be critical of a subject which is so heavily dependent on context and perception, and where one of the few areas of consensus appears to be on the issue that definitions reside if not in the eye of the beholder, then certainly in context. For knowledge management most definitions tend to reflect a private sector and commercial context perspective in which it is difficult to see a role for LIS professionals except as support staff. Typical of such definitions is the following: ‘...the process of creating, capturing and using knowledge to enhance organisational performance’ (Bassi, 1999). More relevant to the library context is Blake’s definition: ‘... the process of capturing a company’s collective expertise wherever it resides – in databases, on papers, or in peoples’ heads – and distributing it to wherever it can help produce the biggest payoffs’ (Blake 1998). Typically for definitions this latter one gives little indication of how or where the specific contribution from LIS professionals might come, although such contribution is clearly intended to be implicit. This is supported elsewhere by claims that since the organisation of knowledge has always rested strongly with librarians, it is they who must not only engage in, but also actively spearhead, knowledge management initiatives (Gandhi, 2004). It has been further claimed that KM employers are beginning to search for LIS graduates due to their ability to organise and classify corporate knowledge (Lai, 2005). In more concrete terms and in asserting a central role for LIS professionals within knowledge management, they have been exhorted to have faith in their own abilities and promote them, not least their abilities in social networking (Reardon, 1998). There is at least anecdotal evidence (of the kind for example that is emerging in our current research project) that while not perhaps always spearheading such initiatives there is LIS involvement across the public sector, and in the legal and financial services and pharmaceutical industries, including at the iconic knowledge management company, Buckman Pharmaceuticals, now Bulabs (Buckman, 2004).

Pointers from the literature

As pointed out several years ago there are many versions of knowledge management rather than a single unified or unitary approach (Despres and Chauvel 2000). This view is supported by evidence of input from a wide range of disciplines from fields such as:

- philosophy and economics, including epistemology (Polanyi 1966; Cook and Brown 1999; Duguid 2005)
- resource and knowledge-based theories (Barney 1991; Grant 1996; Spender 1996)
- various sub-disciplines of management such as accounting and finance (Lev 2001), strategy (Porter 1991), and organisational learning (Crossan et al. 1999)
- the post-Nonaka and Takeuchi boom (Nonaka and Takeuchi 1995; uit Beirsje 1999)
- knowledge-based organisations (Edvinsson and Malone 1997; Sveiby 1997; Choo 2000)
- knowledge strategy (Zack 2002; St Onge and Wallace 2003; Sveiby 2001)

- culture (De Long and Fahy 2000; McDermmott and O'Dell 2001)
- human resource management (Newell et al. 2002; Lengnick Hall and Lengnick Hall 2003)
- intangible value (Bontis et al. 1999; Sveiby 1998; Guthrie 2001)
- chaos and complexity theory (Snowden, 1998, 2002; McElroy 2000; Stacey 2001).

Much of the emphasis in this literature has been on the emergence of knowledge management as a private sector phenomenon, with interest in public sector knowledge management developing much later (McAdam and Reid 2001; Skyrme 2004). This interdisciplinary provenance, which in a practical vein has been paralleled by activity in the consulting world (Gurteen 1999; Koloupolous and Frappaolo 2001) has matured to the point where there are clear divisions, not only between those who would view knowledge management through a technological lens (Alavi and Leidner 2001) but also between those who think in terms of *ages* and *stages* (Koenig 2002; Snowden 2002) on the one hand, and of generations on the other (Firestone and McElroy 2003; Wiig 2004). It seems clear that whatever the particular form and context, knowledge management has now attained a certain level of maturity and with it a place in the broader managerial and organisational environment.

Not only is knowledge management multi-disciplinary in nature, but as indicated in the relevant literature, interest in knowledge management has been a feature of other professional areas and disciplines. As a consequence, multiple perspectives, initiatives, procedures and strategies have been implemented in the knowledge management field. Knowledge management discourses have been implemented within the educational programs of many schools including computer and business schools as well as library and information science departments, and various approaches have been proposed for designing and conducting knowledge management education programs.

It is clear that even before one can comment on broad trends in the provision of knowledge management education within the LIS sector, some allowance must be made for differing perceptions and interpretations of knowledge management (what it is) and also, of the not uncommon tendency for organisations to re-label or re-badge products, services or entities when often little change of real substance will have occurred.

That the LIS community does have a viable interest in the field is reflected in the wide level of involvement by relevant professional bodies including international and national associations and groups such as; IFLA, ALISE, ALIA and the SLA. Paralleling such activity has been the emergence of new library products and services and to some extent, changes in nomenclature for institutions, their services and staff, with terms such as Knowledge Centre, Knowledge Services, and Knowledge Manager appearing alongside more traditional designations. To some extent these changes reflect the influence of calls for new recruitment strategies for LIS students to take account of changing job markets (Martin, 1999) and for significant changes in the mindset of LIS educators (Milne, 1999). These developments have been accompanied by signs of reform in systems of education and training for LIS in order to meet the needs of the future (Tenopir, 2002). To date these reforms appear to have been tentative and piecemeal, reflecting both a lack of consensus or shared understanding of knowledge management among the LIS profession, and perhaps even a crisis of confidence in face of the unfamiliar and threatening. In addition to higher education providers, many professional institutions as well as for-profit and non-profit organisations are also taking advantage of opportunities in the knowledge management training field. This of course

includes professional associations and related bodies within LIS, but again there is the issue of perception and of its effect on the kinds of programs on offer.

Some would claim that LIS has pioneered education for knowledge management, with apparently 37 percent of courses in the field emerging from graduate schools of library and information science (Sutton, 2002). Given that there were omissions in the Australian data cited in Sutton's research (involving not just LIS schools but also those in other disciplines) it would be unwise to take such claims at face value. In the Australian context, however, it is fair to say that most of the leading LIS schools are now offering either full programs in knowledge management or knowledge management modules within other courses (eg. UNISA, UTS, RMIT, QUT). Experience elsewhere has been that often where an LIS school exists, it will serve as the main location for such programs, frequently at an interdisciplinary level. Otherwise, the knowledge management program will be absorbed by business schools and, less frequently by engineering schools (Srikantiah, 2004). Where LIS schools are involved, traditional expertise in the organisation and retrieval of information has now been transferred into areas such as content management and the development of metadata. Other new directions include more emphasis on the theory of knowledge and on the behaviour of people as generators of knowledge.

In a study of different approaches to knowledge management education in various academic disciplines, Chaudhry and Higgins (2003) came to the conclusion that in the delivery of these programs, information systems departments gave more emphasis to the IT component of the program, while information studies departments were more disposed to an emphasis on information organisation and retrieval. Business schools, on the other hand, were found to put more emphasis on business strategies. Hence, the authors suggested the need for a collaborative approach to knowledge management education, to avoid the danger of unevenness in content and to provide learners with a symmetrical coverage of different courses. Investigating the perspectives of the heads of 12 LIS schools on knowledge management education, Rehman & Chaudhry (2005) also came to the conclusion that interdisciplinary settings provided a better context for academic programs in the area of knowledge management. This collaborative approach has also been recommended by other commentators (Hawamdeh, et al., 2004) on the grounds that knowledge management is relevant to the interests of various groups and each group has its own contribution to make. This interdisciplinary approach has been adopted by a number of universities including Syracuse University in the United States, where they draw upon the fields of communication, computer science, information science, and library science (Settel and Marchand as quoted by Logan and Hsieh- Yee 2001).

Nonetheless, it has to be reiterated that before any wholesale changes can be made, it is first necessary to identify not only the kinds of jobs that are opening up for knowledge-literate LIS graduates, but also the knowledge and skill sets demanded by the market for knowledge-aware library and information professionals. Important work has been completed in this regard, through the creation of knowledge management competency profiles based both on an analysis of the market and on the multiple perspectives of diverse stakeholder groups (Milne, 1999; Todd & Southon, 2000; Morris, 2001; Breen, et al., 2002). Likewise, looking for the preferred skills and knowledge required by knowledge management employers Lai (2005) came to the same conclusion as that reached in earlier research (Koenig, 1999), that ideally this would include the traditional core skills of LIS, albeit translated into the kind of language spoken by business professionals in the corporate environment. There is ample literature on the importance of this transition and associated changes in the knowledge and perceptions of

LIS professionals, in order to maximise their previous skills and apply their existing skills in a new environment, (for example: Reardon, 1998; Church, 1998; TFPL, 1999; Todd & Southon, 2001; Starr, 2004; Abell & Wingar, 2005).

Researchers at the school of computer and information science at Edith Cowan University developed a provisional model for a knowledge management course. In doing so, they sought to measure the preferences of information professionals in relation to course content and course options, as well as their attitudes toward knowledge management and the industry demand for personnel qualified in knowledge management. The results of this survey showed that there was ambivalence among information professionals as regards the inclusion of information science subjects, including information organisation and information retrieval, in the curriculum. The results also revealed strong support for the provision of intensive short courses, as well as ongoing market demand for knowledge management-trained personnel. In undertaking this study, Brogan et al. (2001) suggested that LIS course designers consider the multi-disciplinary character of knowledge management, and the competitive nature of the marketplace, while recognising that information science subjects were not enough by themselves. However there is still a need for more research in this area.

As interest in knowledge management as a subject increases, numerous proposals have emerged in the area of teaching and learning. For example, at the University of Technology, Sydney lifelong, situated, collaborative and flexible learning are given emphasis in knowledge management courses at the department of information studies. One objective of taking this approach is to help students understand how people use their knowledge for personal development or for strategic advantage (Todd and Southon, 2000).

As many authors acknowledge, this variety in content and emphasis in knowledge management courses has created competition in the job market for knowledge management graduates. Arguably, since LIS courses equip students with sufficient skills for participating in key knowledge management processes (embodied in the life cycle from creation to disposal of knowledge), they should be visible in this market, provided the LIS schools apply rational education and training strategies. However, as has been seen, much of the research that has been conducted into the knowledge management dimension of LIS education has been fragmented and dispersed. Nonetheless, these research studies have hopefully established the need for a more holistic and comprehensive study of what precisely knowledge management would mean in an expanded LIS context, including the implications for LIS staff, students and educators, and investigation of vehicles for the provision of knowledge management education.

A research agenda

Knowledge and related intangibles are now the crucial element of value creation in most economies, and their management is of major significance to all organisations. Knowledge management has attracted significant investment within the last two decades, much of it in technology. It has also attracted huge interest from a range of professional and disciplinary bodies, resulting in a tremendous explosion in related activities including websites, research, seminars, conferences, workshops, and educational programs devoted to the market demand for knowledge managers. The broad interdisciplinary nature of the subject and the presence of a range of general management type programs, along with those aimed at specific professional groups, has complicated such matters as curriculum design and sources of provision, something that is as true of the field of LIS as of anywhere else.

There is a growing acknowledgement within the literature that the LIS professions have a serious contribution to make to the success of knowledge management. As is also clear from the literature LIS schools have responded in different ways to the need to educate professionals and provide them with the appropriate knowledge-related skills and capabilities. This response has appeared at times to be somewhat haphazard and often a reaction to perceived threats either of a technological nature or from other professional groups. It is increasingly clear that to be effective, these programs must be grounded in a comprehensive understanding of the nature of knowledge management, particularly as it relates to LIS, with subsequent attention to the characteristics of knowledge work and the competences required of knowledge workers. Such understanding requires the conduct of in-depth research that sets the knowledge management education process for LIS professionals firmly within the wider educational environment, identifies current trends, and on the basis of feedback from key players in knowledge management education, including educators, students and professional bodies, investigates the options and alternatives available to LIS educators and provides a framework for future action. A research project currently under way at RMIT University aims to fulfil this need.

Research objectives

As a piece of interpretive research, the main purpose of this study is to explore the implications of knowledge management for library and information science education and to capture the multiple perspectives that LIS professionals are likely to have on knowledge management education. The more specific objectives of the research are:

- to analyse the trend toward inclusion of a knowledge management element in the education of LIS students over the period 1995 to 2005
- to understand the parameters of knowledge management within LIS Education
- to investigate the educational outcomes (successes and failures) of knowledge management initiatives
- to explore any linkages between changes in LIS education (formal and informal) and improved knowledge management practices in libraries
- to clarify the roles and responsibilities of LIS education providers in providing knowledge management programs
- to identify barriers to the inclusion of knowledge management in LIS curricula
- to recommend an educational framework for LIS professionals that takes account of the growing demand for knowledge management.

Research questions

In pursuing these research objectives, the following research questions will be asked:

1. Are LIS schools emerging as major providers of knowledge management education?
2. What are the different perspectives on knowledge management education for LIS professionals?
3. What are likely to be the most effective means of providing education programs in knowledge management for the LIS professions?
4. What is likely to be the most appropriate course content for knowledge management programs in LIS schools?
5. Can existing LIS curricula meet the needs for knowledge management education or is input from other disciplines needed?
6. Are practising librarians (whose course pre-dated the advent of knowledge management) updating their knowledge in this area through continuing education?
7. What are the core capabilities for LIS people operating in knowledge management environments?

8. What are the main roles and responsibilities of knowledge management education providers?
9. What are the gaps between the current levels of provision and those needed within the next five to ten years?

Methodology

The methodology employed in this project comprises a combination of quantitative and qualitative methods. It falls largely within an interpretivist paradigm in that it seeks not to identify or test variables, but rather to draw meaning from social contexts, in this case from the perceptions of key players within the LIS sector. The methodology employed includes literature review and document analysis, followed by web-based surveys of LIS professionals and in-depth case studies of LIS schools, mainly in English-speaking countries. The survey has already been conducted and the data are currently being analysed.

Pilot study

In September 2005, the questionnaire was pilot tested on a random sample of leading LIS scholars in Australia, New Zealand and the United States. Their feedback was incorporated into the final draft of the questionnaire, which comprised a number of sections all incorporating both open-ended and closed questions. The sections sought responses on respective attitudes and opinions on education for KM including: the status of such programs, responsibilities of LIS schools, determinants, motivators, challenges and benefits in offering knowledge management courses, curriculum content, potential competencies among LIS graduates, and finally demographic-type information to do with job position, qualifications, age, gender, and country of residence. The scales used in the questionnaire were non-metric scales including nominal (age, sex, country, job position and qualification) and ordinal scales (5 and 7 point Likert scales, including level of agreement and level of importance). A brief introduction providing details about the researcher, affiliation, supervisor, the title of project, the purpose of the research, the value of participation in the survey and a general definition of knowledge and its related terms, was located on top of the questionnaire.

Web-based survey

To gain an international dimension on the views of LIS professionals, a web-based questionnaire was released through a range of national and international LIS listserves and discussion groups (including IFLA KMDG-L, ASIS & T SIGKM- L, CILIP LIS- EDU, JESSE, ALIA, SLA) in April 2006. A formal e-mail had first been sent to the list owners seeking their permission to release the link to the questionnaire through their list.

Results

Since the survey was conducted on the World Wide Web, the calculation of a response rate is extremely difficult. However so far, after two months of releasing the questionnaire we have received 106 responses. Although this number of responses is quite enough for analysis purposes, the length of the questionnaire as well as the specialised theme of the survey may induce non-participation by many people.¹ The following findings report on some of the closed questions.

¹ One of the respondents who has some publications in this area e-mailed me that 'started doing your questionnaire, but found it too long. I am well away from the LIS environment now, so my comments would not be that valuable'.

The majority of respondents (69.7 %) were from the United States and Australia; with 35.8% and 33.9% respectively. The proportion of female respondents was 75.5 %, which is perhaps to be expected in a profession where women are so well represented. Furthermore, most of the responses came from people who were between 25 and 65 years old.

Preliminary data analysis revealed that respondents were very positive about knowledge management and about its potential for the future status of the profession. Some 93.4% of respondents acknowledged that LIS professions should engage more fully with knowledge management. The results also showed strong support for the conduct of knowledge management education at LIS schools, with almost 70% of respondents being of this opinion and around 13 % disagreeing. There was also a high level of agreement (69.9%) among respondents that the LIS schools need to rethink their mission and strategies in respect of knowledge management and its implications for their curricula, with another 74.5% believing that this included change in the LIS curricula in order to respond to the challenges of knowledge management. More specifically in the matter of curricula, results indicated that there was a high level of agreement (63.2%) among LIS professionals that current LIS curricula did not equip students with the competencies demanded for effective performance in knowledge management roles. This reinforced findings from other recent research based in RMIT University (Sarrafzadeh, 2005).

In relation to the content of knowledge management curricula, participants were asked to rank new and potentially new subjects appearing in different knowledge management programs. The following subjects, along with related issues, emerged as being seen to be highly important in the knowledge management element of the LIS curriculum: the knowledge-based economy, knowledge and related intangibles, mechanisms for knowledge management, including knowledge creation, acquisition, organisation, transfer and leveraging; organisational and management issues; and some form of practicum within the knowledge management curricula.

Conclusion

Such conclusions, as are reported here, are based on a review of relevant literature and on analysis from the survey of the LIS community. More detailed and richer information is expected from the interviews and case studies that have still to be conducted. It is clear at this stage however, that education for knowledge management is a matter of interest to a number of disciplines and professions. It is also clear that this includes the LIS professions, not least owing to the evident links between information and knowledge management and the growing demand for suitable knowledge management courses (Morris, 2001). The reference to *suitability* is important, especially given the nature of KM education and the significant involvement of the business schools. The research reported here has indicated that elements of business and management education are already relevant to the knowledge management component of LIS education, let alone in terms of future markets and the needs of prospective students and employers. However, in the search for these necessary managerial and organisational-level competencies, it is important that not only core LIS subjects, where they continue to be relevant, are retained and developed, but also that these developments take place within the broad ethos and values of the LIS professions.

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