

Using Distance Education to Internationalize Library and Information Science Scholarship

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Library and information science educators have long sought to internationalize scholarship to enrich the quality of educational programs and professional practice. But many obstacles restrict the size and growth of traditional international education efforts, particularly in developing countries. This article presents a case study that uses emerging distance education techniques to deliver a graduate course on knowledge management in The Peoples' Republic of China and the United States. Sponsored by the U. S. Fulbright program, this demonstration project blends learning technologies, using Web-based WebCT software, videoconferencing, personal contacts and readings to create an international,

virtual learning space. The article describes how faculty and students achieved the three course goals: (1) learning to learn internationally, (2) bilateral communication and (3) knowledge management. Findings and recommendations support the following conclusions: using active learning pedagogies that engage the students in the learning process; applying multiple technologies that can be supported internationally; maximizing the use of two-way, asynchronous and synchronous communication to encourage individual and group learning; and focusing on broad, interdisciplinary content to facilitate participation in international learning environments.

Rationale

Library and information science (LIS) educators have long sought to internationalize LIS scholarship. Among the benefits advanced for international scholarship are: (1) advancement of professional knowledge and theory, (2) comparative analysis of professional practice, (3) globalization of knowledge, (4) services to multicultural populations, and (5) personal development (Apadurai 1996, 27-47; Hawkins & Battin 1998; de la Pena McCook 2000; Noronha 1992). Professional knowledge and theory have been shared for

more than 125 years through the conventional forms of scholarship and publishing. Theorists like Ranganathan (1963) and Shera (1973) are studied throughout the world as students learn general principles of library and information science (LIS). For at least 75 years, LIS practitioners and educators have shared practices through publications and exchanges of research and practice. Findings filter back through LIS educational programs to students. Recent globalization of knowledge sources, including library automation and database providers, is accelerating international exchange. LIS professionals throughout the world

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now routinely share knowledge through common LIS systems and knowledge resources. LIS students learn to organize knowledge in increasingly common ways. International experience is also critical for creating multicultural service environments that are useful in different cultures and traditions in increasingly diverse nations. LIS professionals can work internationally to fashion culturally responsive services that can be implemented wherever that population occurs. Finally, international LIS education provides an opportunity for reflection and personal growth, as meaningful international experiences will raise unique questions about improving one's performance as a professional person. Distance education represents an opportunity to use the scholarship of teaching to internationalize library and information science.

International LIS education

Library and information organizations encourage international LIS education. The International Federation of Library Associations and Institutions (IFLA) Section on Education and Training provides a forum for advancement of educational theory and practice (Campbell 2002). The Section also issues guidelines for library and information science educational programs. (IFLA Section on Education and Training 2001) Personal relationships developed in the Section lead to the advancement of theory, exchanges regarding educational practices, and personal development. Other IFLA sections focus on type of library services, multicultural services, and regional collaboration. These sections also frequently involve LIS educators and thus contribute to improved educational practices, consideration of multicultural services, and personal development. IFLA core programs, like Universal Bibliographic Control and Universal Availability of Publications, are intended to expedite the globalization of knowledge. Library educators frequently use information developed by these IFLA core programs and the current core initiatives for comparative analysis and personal development.

Many national organizations also encourage international learning opportunities for their members. In the case of the authors, both the American Library Association (ALA) and the China Society for Library Science support inter-

national outreach through formal committees and staff support. For example, both organizations have provided critical support for both China/U.S. Conferences on Libraries (Lynch 2002). In some countries, professional efforts are also coordinated with government supported exchange programs for scholars, such as the Fulbright program in the U.S., that offer an opportunity for extensive collaboration and learning through residence abroad. International learning can then be integrated into research and teaching upon return to the home country (Center for the International Exchange of Scholars 2002).

Schools of library and information science regularly sponsor international educational experiences. These have ranged from student study abroad and study tours for professionals, to teaching and research partnerships with foreign library schools, and offshore degree programs. At a recent conference on globalization of library and information science education, participants endorsed school and professional exchanges and recommended that each LIS school identify a coordinator to provide leadership for international activities (Poley 1998). In addition, collaboration among individual faculty was recommended, including shared research, exchange of syllabi, and Web-based co-teaching (Daniel & Scepanski 2002).

The continuing efforts of LIS organizations and schools to support international education demonstrate the significant benefits these institutions expect to receive through international collaboration. But LIS international scholarly efforts continue to be operationally constrained by traditional educational methods. Costs are high when a scholar travels from one country to another. Personal time commitments are also high. Establishing oneself in a foreign LIS community, learning local culture and language, identifying instructional and research conventions, and making contacts necessary to be an effective scholar all take time. It also takes time to catch up upon a scholar's return to the home community. Personal and family considerations frequently impact an individual's willingness to engage in traditional international education efforts.

Programmatically, offshore programs are usually one-way only, from the sending school to the receiving student. As a result they may ignore valid cultural differences and thus lose much of

their effectiveness. Selecting international partners is very difficult without establishing a presence abroad. Concerns about instructional content, teaching quality, differences in educational practice, and limited opportunities to communicate, require local knowledge in order to be resolved.

Distance education techniques developed in recent years can resolve most current operational constraints by creating an international approach to the scholarship of teaching. Current technologies, such as the Internet and videoconferencing, can be blended to create a single learning environment. International scholarship is one area where technology dramatically reduces unit costs and can dramatically increase participation. Time and personal commitments, while still large, are significantly less than a foreign residency. Pedagogies are being developed that take advantage of current technological abilities to ignore distance. Virtual international classrooms can be designed to involve all participants and promote active learning. Instructional techniques can also be used to facilitate the development of cross-cultural teams and multicultural awareness (Berge & Mrozowski 2001; Butner, Smith & Murray 1999; Knoble & Bunker 1997; Olgren 2000).

This article presents a case study on internationalizing library and information science teaching scholarship. The case study tests the efficacy of distance education technologies and active learning principles in overcoming traditional international limitations of LIS teaching scholarship in the field of knowledge management. It involves a Sino-American collaborative relationship between Beijing Normal University and New Mexico State University. Additional costs for the course were funded in the first round of the U. S. Fulbright Alumni Grant program. This article summarizes course goals, describes episodes and how technologies and pedagogies were used and presents findings and recommendations.

Goals

The course that is the focus of this case study is a graduate-level survey of knowledge management with a focus on applications in education. The course is multidisciplinary and uses principles of team learning to create a learning environment.

Thirty-two graduate students enrolled in the course, including eight education students from New Mexico State University and twenty-four library and information science students from Beijing Normal University. The course used WebCT software, videotaped lectures, and videoconferencing technologies to create a virtual environment for learning. Four bilateral and multidisciplinary teams, composed of eight students each, were formed to undertake group assignments and share learning. Assignments involved both group and individual work. Outcomes were stated in both group and individual terms. The two instructors, one Chinese and one American, shared instructional responsibilities with one focusing on explicit knowledge and technical aspects of knowledge management and the other on implicit knowledge and social aspects (Townley, Geng & Zhang 2002; Strohschen & Heaney 2000).

The course has three learning goals. First, students and faculty learn how to learn in an international and virtual classroom. This goal emphasizes that international education is a new experience for LIS education, that distance technologies are being tested in an international learning environment and that there will be significant learning about the process of learning during the course. The course pedagogy and technology are designed to enhance individual and team learning. The second goal involves multicultural communication, that students and faculty will develop skills and learn methods that are effective in communicating across cultures. Multicultural communication is considered important because LIS professionals in China and the United States must address minority cultures in their home countries and because both countries want to be engaged internationally. This course gives students from both countries and representing multiple cultures within those countries an opportunity to learn about culture in a different environment and to reflect on what this means for the local practice of library and information science. The third goal focuses on the field of knowledge management: students and faculty will develop an understanding of knowledge management principles and how to apply them in educational organizations. Knowledge management is at the intellectual center of the course. Knowledge management is increasingly impor-

tant for service organizations of all types as they seek to use knowledge to advance organizational goals. The following sections demonstrate how the three goals are addressed by reporting critical episodes and processes in the course.

Learning to learn – pedagogy and technology

The course in knowledge management takes place in a technologically supported, virtual environment, where faculty and students acquire or bring useful information for learning. Active learning is accomplished through the use of four, eight-person bilateral teams. It is assumed that Chinese and American students have different learning styles (Alexander 2000; Sanchez & Gunawardena 1998). For optimum learning to take place, the students and faculty must learn new ways to learn. To expedite team formation, the first joint assignment is carefully designed to introduce the bilateral teams and to provide an opportunity to work together in a supportive environment. The first joint activity is a teleconference where the students are assigned to create a team name and motto. Each team has twenty minutes to identify its name and motto. It is an opportunity to learn about other learning styles and work out mutually acceptable compromises on a mutually interesting topic.

In this case, both national and individual differences were quickly evidenced. Concerned about the time limits of the videoconference and their English language speaking proficiency, Chinese students caucused ahead of time and agreed on one team name and motto they would advocate to their American teammates. American students arrived for class understanding the assignment and expecting to brainstorm for alternatives. As a result of these differences in learning style, the groups tended to talk past each other during the first part of each discussion. Chinese students were surprised that the Americans had no specific proposal. Further, Chinese students had to encourage American teammates to engage on their proposals. Americans were surprised that their Chinese teammates presented only one recommendation and that the Americans were expected to shape that initiative into something that was meaningful for them or negotiate another alternative. This experience was predictable given differences in pedagogy and technology, with the

Chinese being more formal and considering technology as a scarce resource and the Americans less structured and considering technology as ubiquitous. In addition, some differences were related to the fact that Chinese students were young, full-time students who were less fluent in English and had little professional experience. Americans, on the other hand, were part-time, older students, who were fluent in English and usually had significant experience as educators. Whatever the cause, all the students quickly recognized that the two groups of students on their team had different learning styles. Further, all the students quickly understood they would have to learn new ways of learning to accommodate other team members and to take advantage of the technology in order to successfully accomplish the goals of the course. As one Chinese student said in the evaluation:

Videoconferencing is very useful in distance education. [It is] just like our team name – Beyond Space and Time. I think we need more videoconferencing to help us communicate more directly. (Student evaluation 2001)

And as one American student stated:

I found that 2-way I.T.V. certainly offers an opportunity to interact at a distance. Working with our Chinese partners would often leave me with doubts as ... to whether a clear understanding was achieved through either the discussion board or the chat room. When it came time to present the project, seeing them face-to-face was quite encouraging. (Student evaluation 2001)

The videoconferencing system was tested prior to the course. Because of the cost exceeding 600 USD per hour, it was only used for three hours during the course. All videoconferencing time was team time. Early in the course one hour was used to focus on learning to learn as described above. At the end of the course, two hours were devoted to group presentations. More visual contact time would have allowed the groups to bond more closely. Current advances in streaming video over the Internet should soon make it possible to increase the amount of live video without significant cost. Videoconferencing had some technical issues because of the great distances between Las Cruces and Beijing. But these problems were quickly diagnosed by support staff and did not substantively distract from learning (Whitworth 1999).

Videotapes were used to summarize knowledge management content. To assure adequate time for shipping, these tapes were made at least a month before their viewing date. Given the one-way nature of this technology and the pedagogical goal of team learning, the videotapes were not full lectures, but rather summaries of key points. They were played at both locations at the beginning of weekly synchronous class meetings. The tapes could then be replayed as needed. In addition, written outlines of each summary video were distributed prior to class to facilitate understanding. Two problems emerged with this technology. First, the tapes were sometimes out of context because of changes in learning directions that occurred between the taping and the time they were used. And several times deliveries were not made in time for the appropriate class. The instructors learned to rely on delivery services rather than the post to expedite customs clearance and delivery. As mentioned in the previous paragraph, the pending availability of streaming video will facilitate formal presentations in an international course.

Class schedules followed a similar pattern each week. Synchronous class time was two and one half hours each week. Synchronous class sessions occurred in the evening in the U.S. and in China the following morning, conveniently matching normal class times in both countries. Students were expected to have completed their readings prior to the class. The instructor for the week would forward a summary outline prior to the class so the students could familiarize themselves with the subject material to be covered. The lecture would take the first 20 to 30 minutes of class with the videotape being played simultaneously in both locations. Frequently there would be a brief assessment of learning, like a one-minute essay, following the lecture. Then teams would discuss the topic of the week. After a break, teams met to work on their project or there would be a special topic for discussion. Asynchronous discussion took place at other times as students participated in group assignments and bulletin board discussions (Rusaw 1998).

New competencies

Faculty and students have to master using distance technologies before they can learn content

or culture in an international virtual classroom (King 2001). In addition all of the participants need the same technological competencies to perform their professional roles in today's world. Therefore, a course goal to learn to learn is appropriate. In learning new technologies, faculty and students were helped in that New Mexico State University and Beijing Normal University provided staff support for videoconferencing and for WebCT activities. This meant that the students and instructors had expert assistance in implementing their pedagogical concepts. It was also helpful that some of the American students and one of the Chinese students had some experience with distance technologies and could support systems on site. To assure minimum competence, several hours training was provided for those not familiar with WebCT. By the fourth week of the course, student participation indicated that all of the students were involved and the teams were interacting effectively.

Course administration was expedited as a result of previous contacts. The American Instructor had been a Senior Fulbright Lecturer at Beijing Normal University two years before and continues to serve as a visiting professor. So the senior Chinese students had been in his classes and were familiar with him and he was familiar with them and, through them, with basic Chinese approaches to learning. These experienced Chinese students provided insights about American instructional styles to the other first-time students. Also, the two instructors had worked on the syllabus and goals during a joint planning exercise in Beijing in the spring of 2002. Finally, a Chinese-speaking student was enrolled at the New Mexico State University and could quickly translate when necessary. She also served as the graduate assistant for the course. All of these facts made accommodation to different learning styles and technologies easier and more effective (Nixon & Leftwich 1998, Poley 1998).

At the end of the semester, faculty and students agreed that a learning environment had been created that allowed a bilateral population of students to learn to learn. The synchronous and asynchronous discussions and the videoconferences were considered especially useful. Shortcomings of the videotapes were primarily technical and can be addressed through streaming video. Readings were considered appropriate

and timely, though there were requests for more translations. Written outlines were considered very helpful in clarifying verbal presentations. The quality of the discussion, team projects, and periodic evaluations indicated that the students were learning the material. The open and sometimes frank discussion on the chat rooms and bulletin boards indicated that the teams were functioning as learning communities. Several students noted the benefits of active learning:

Active learning incites the passion of study and organizes students better. In active learning discussion is free. All can share [each] others' knowledge. In this way education is effective. I learned to communicate with people who have a different culture from me. Although we have different language, different professional background, and different culture, we share what we have. We do what we can to help each other learn. (Student evaluation 2001)

Bilateral communication

In today's globalized world, it is important that library and information professionals in different cultures communicate effectively to develop theory, to contribute to professional practice, to provide access to knowledge, to deliver effective services, and to engage in professional development (Higgins & Khoo 2000; Lauzon 2000; Samovar 1981, 23–58). One goal of this course was to provide opportunities to learn how to communicate with a different culture. While many examples of learning to communicate about cultures can be cited, one episode in particular stands out.

One team planned a knowledge management system for a public school system. The system was intended to measure learning activity and use performance measures in ways that would lead to reform and improved effectiveness. All members of the team readily agreed on involving the faculty, administration and the students. But American students went further, insisting that parents be involved in the knowledge management process in ways that could influence educational improvement. This was a new concept for the Chinese students. In China parents have not been directly involved in educational evaluation and reform. At first, the Chinese did not understand why parental involvement in an education knowledge management system might contribute to organizational effectiveness. The

Americans, who were specifying the knowledge problem to be addressed, kept including the parents in the knowledge management process. The Chinese team members, who were developing the technical specifications, kept leaving the parents out. Demonstrating significant personal development, the Chinese teammates came to believe that parents do have a role to play in education and that knowledge management systems for education should include parents. At that point they began to include parents in their design. At the end of the course one Chinese student commented:

The American members provide a topic about "Parents Participation." We Chinese classmates all can't understand their meaning and intention. But we think maybe we should be patient and have all team members express their own thought in detail. At last, we agree that "Parents Participation" is a valuable topic. (Student evaluation 2001)

Several factors appear to be critical in creating a successful environment for bilateral communication. First, bilateral communication is highly language dependent, especially in LIS and other social sciences that frequently involve qualitative as well as quantitative learning. Students must have a common medium of communication (Samovar 1981, 134–150; Sanchez & Gunawardena 1998). In this case the common medium is English. In videoconferences and videotapes, it is spoken English and in WebCT it is written English. Chinese students are all required to pass English language competency to enter higher education. They tend to be most proficient in written English. So WebCT is their preferred medium for individual communication, particularly asynchronous communication like bulletin boards, where students have time to prepare extended or detailed responses. Understanding this, all individual assignments in the course are contained in WebCT. American students also have to learn to use English in new ways, especially avoiding or explaining the use of slang, if they are to be understood. While unplanned, the instructors observed that bilateral communication equity was assisted by an enrollment ratio of three Chinese students for every American. Both groups felt they had an opportunity to communicate and were not overwhelmed by the other. But communication was not seamless. As one Chinese student stated:

In the course the US students are more active than the Chinese students, especially when discussing in the chat-room. Sometimes the words and expressions used by the US students do not accord with what we have learned. (Student evaluation 2001)

Synchronous communication

Synchronous individual communication took place during most class meetings. Between forty and fifty minutes of class time was devoted to having teams discuss the knowledge management topic of the week. Students were expected to share their thoughts about the topic and its application in their environment. A different team member facilitated the discussion each week on a rotating basis. Synchronous discussion provided an opportunity to expand and comment on the lecture and readings while they were fresh. Faculty would move from group to group, observing conversations and occasionally participating. Most American and many Chinese students participated enthusiastically. Those Chinese students with limited English skills participated less, but sometimes made significant contributions when they felt strongly about a topic. Synchronous contributions tended to be brief and delivered in a stream of consciousness style. Cultural differences in learning styles emerged early and frequently created repeated opportunities for advancing bilateral communication. Chinese frequently had studied the readings and lectures more deeply than Americans. Americans learned to trust Chinese attention to detail. On the other hand, Americans generalized more frequently and questioned the writers and speakers more closely. Chinese students came to respect American students' ability to place issues in context. As one student said:

American students are more practical. And they always connect knowledge management with practice, while the Chinese students are not so experienced. What we always think and talk are more about the book and principles. (Student evaluation 2001)

Asynchronous communication

Asynchronous individual communication took place outside class time. Two forums were provided. Each team had a private bulletin board to discuss their team assignments. Different teams used these bulletin boards in different ways. One

team carried on an extensive discussion about its assignment. But the other three teams chose to divide their assignments with American team members taking responsibility for needs assessment, design and evaluation and Chinese students taking responsibility for technology, functionality and operations. By doing this they created national sub-teams to carry out the work. Thus with one exception, bilateral communication related to group projects was less than expected. A different structure could have required bilateral interaction and perhaps more learning about bilateral communication (McDonald & Gibson 1998). One student described learning to communicate as a result of her experience in the unified group,

At first what we faced was not only the language obstacle but also different understanding about the project produced by our different educational background. In class chatroom and group mailbox we discussed our project many times. As a result of our active cooperation, we overcame two difficulties. And we completed a good paper and did a good presentation! I would admit that we have done a good job in communication and understanding! I believe that when I encounter a similar case, I can solve it smoothly using this experience. (Student evaluation 2001)

The second asynchronous forum was in a WebCT commons area composed of three asynchronous bulletin boards addressing different subjects: knowledge management terms, cultural issues and writer defined topics. Over the course of the semester, each student was expected to initiate three discussion threads on each bulletin board and to contribute to at least six other discussions on each bulletin board. Of the three bulletin boards, the "Cultural Corner" was the most heavily used. Topics from dancing to cooking to poetry were enthusiastically discussed as students sought to understand each other's background and values. Knowledge management terms were also well addressed, with several generating significant debate as professionals in training compared their professional understanding and values. The writer-defined bulletin board, however, never generated major interest. Perhaps students experiencing their first international contacts need more structure. One American student noted

I was struggling to learn all the new terminology and concepts in the field of knowledge management while the

Chinese students would write about it on the bulletin board as if it came so easy for them. The Chinese students [also] shared a lot about their culture and traditions on the bulletin board. Many of their descriptions of cultural things were so beautiful, almost poetic. (Student evaluation 2001)

Lectures and readings represent one-way forms of communication. But they can be designed to assure bilateral communication. In our case, the two instructors brought complementary strengths to course. The Chinese instructor was strongest in knowledge management technologies. The American instructor was strongest in cultural issues and management. As a result, class presentations were split in half assuring bilateral communication in the delivery of class summaries (Kroder, Suess, & Sachs 1998; Strohschen 2000).

Cultural issues

Readings were mostly in English, although a few Chinese translations were available. The text was by Srikantaiah and Koenig (2000). Other works supplemented the text. Brief, frequent assessments revealed that both the American and the Chinese students had mastered the readings. Language was not an issue in that both Chinese and American students had reading knowledge of English. Unfortunately, available publications tended to focus on the practice of knowledge management in developed countries. Therefore, overview examples of developing country experience, whenever available, were used in the summaries to assure that equity was maintained.

Students developed individually throughout the international course. Evidence of reflection emerged as the course progressed. As the episode at the beginning of this section attests, the students began to reflect on their professional responsibilities in light of their international experience. For the most part, this resulted in more openness and flexibility. Chinese students learned to incorporate user needs into their efforts to provide LIS services. American students learned to value knowledge management and how it can help them. Students indicate that this experience will have an impact on their practice as professionals (Rovai 2001).

Several American minority students observed that working with another culture gave them an opportunity to reflect on their own culture and its

relationship to the majority culture in their country (Noronha 1992; Sanchez & Gunawardena 1998). As one American student remarked to his instructor,

I understand Hispanic culture because it is my native culture. I understand Anglo culture too, because that is where I work and live my professional life. I thought understood multiculturalism. But exposure to Chinese culture is making me rethink some of my assumptions. (Student interview 2001)

Students and faculty improved their bilateral communication skills as part of the knowledge management course. Indeed, during the course it became clear that learning how to interact with a different culture is as important as learning subject content in terms of learning outcomes. In addition, many students reflected that learning about another culture through working with foreign students provided them with insights into working more effectively in their own culture. This kind of personal development is important for LIS professionals, particularly those working in multicultural countries like China and the United States, or those interested in an international career.

Knowledge management content

Knowledge management is an emerging field that incorporates knowledge from traditional LIS programs, computer science, communication, accounting and other disciplines. This course is a survey of knowledge management with a special focus on educational applications. Student teams worked on projects throughout the semester to plan knowledge management systems for educational organizations (Davenport, DeLong, & Beers 1998; Friedman & Hoffman 2001; Jantz 2001; Kidwell, Vander Linde, & Johnson 2000; Townley 2001).

One interesting project was an effort to apply case-based reasoning in a school system. Case-based reasoning (CBR) is a form of artificial intelligence that analyzes previous occurrences to identify facts and trends and make recommendations for action. Students worked to identify school issues that could be addressed by CBR. They identified issues like test construction, course scheduling and physical space analysis that contain vast amounts of explicit knowledge created

by previous iterations. The team also identified case-based reasoning software that can be used to analyze this data. And they recommended initial steps for schools and government organizations to take in developing CBR systems for education. Case-based reasoning is just coming into use in educational institutions and the team was unable to find many examples to share. But the potential is clearly demonstrated. For example, if CBR can help create test items that more accurately measure student achievement without bias, current efforts to assure educational accountability will be strengthened.

The four team projects were presented in a two-hour teleconference that occurred during the last class meeting. All of the teams chose to divide their presentations with Chinese presenting technical information and Americans giving rationale and summary information. Both instructors graded the presentations and papers, agreeing on the ranking of teams and reaching consensus on grades. Interestingly, the Chinese sub-teams all used graphics in their presentation and none of the Americans did. The content and quality of the team presentations and written papers demonstrated that the teams had learned to apply knowledge management theory to specific educational management issues (Whitworth 1999).

The multidisciplinary nature of knowledge management can be an advantage in executing a first course in an international setting. In representing several disciplines, students bring a range of useful skills and theoretical viewpoints to knowledge issues. Faculty can use this disciplinary diversity to create learning situations where these skills and viewpoints can be drawn out and shared in a learning community (Nixon & Leftwich 1998). In this course, librarians, technologists and educators came to learn about knowledge management through their fellow students. Students in other social science and technological professions would find this international classroom equally welcoming.

On the other hand, several students commented negatively about the diverse nature of the students and the diffuse nature of knowledge management. They were highly focused on learning how to apply knowledge management in an organization. They felt they were not learning as deeply about knowledge management as they

would in a class where all the students were from the same discipline.

Because the field is new, all students start without a deep understanding of knowledge management. This helps assure equity in the international classroom. No group has a distinct advantage in the class as a result of previous study. International interest in knowledge management makes it a good candidate for an initial international course involving two or more LIS schools.

Like other technically rich fields, the study of knowledge management has to take the ability of local organizations to support technology into account in the course design (Coukos-Semmel 2002; Townley, Geng & Zhang 2002). First, the schools must have access to and be able to support the technology. In this case, both schools have adequate Internet connectivity, videoconferencing, videotape and computing equipment. Second, the topic needs to have some relationship to LIS practice in the participating countries. For this course, surveys of knowledge management in education were made in both China and the United States. While responses were partial, both surveys indicated that there is awareness and interest in knowledge management in educational organizations. The surveys also reveal that support and facilities have not yet been made available to undertake widespread applications. Thus the projects designed as part of the course remained more theoretical than applied.

By focusing attention on communication and culture as well as technical issues, an international course in knowledge management is more likely to produce students who will provide effective answers to knowledge management questions. It is unlikely that any of these students will ignore environmental fit or technology in any of their solutions. Students who complete an international course in the social sciences can use their experience to think deeply about applications and their appropriateness in the host organization.

Findings and recommendations

This course provided a rich opportunity to learn about LIS educational methods in an international setting. We experimented with using technology to support a virtual classroom where students and faculty from two countries learned to learn. The instructors worked to create an environment

where bilateral communication was encouraged and reinforced. We learned about the basics of knowledge management and sharing information as we planned applications in the field of education. As a result of this activity, we believe the following findings and recommendations will hold true for others developing international coursework and degree programs in library and information science.

Learning to Learn

- International LIS learning must address pedagogy, technology, and culture as well as content to be successful. LIS students will learn more in learning situations that reflect both the culture and content of international environments.
- LIS students, even those without a strong international interest, find that an international learning environment stimulates learning through both knowledge acquisition and reflection. Such students are willing to make the additional effort required to learn communication and technology as well as content involved in an international course.
- Because technologies remain imperfect, because cultural issues vary by location and because student backgrounds vary, international LIS courses should be loosely structured to create a learning community that can deal with these challenges as a part of the learning process.
- Visual, real-time contact within teams reinforces team learning and is crucial for success, especially with LIS and other social science students who tend to like “high touch” environments.
- Blended distance technologies, using synchronous and asynchronous communication, multiple media and involving active learning are the most effective way for LIS students to learn in an international virtual classroom.
- Advanced planning among LIS faculty and schools (in person if at all possible) is essential to assure that pedagogies and technologies are compatible, cultural conventions are understood, and content addresses learning needs in two or more cultures.
- Instructor preparation takes at least twice the normal time to assure that technological, cultural and content issues reinforce each other in the virtual classroom. Preparation will require additional time if staff support is not available.

Bilateral Communication

- Until automatic translation becomes transparent, a common language is essential for international LIS edu-

cation. Differences between native and non-native speakers can be accommodated through use of different and redundant forms of communication, such as video and written communication, and by overweighting non-native speaker populations.

- LIS students find synchronous communication useful for debating current topics and building consensus. Groups need to be large enough to keep discussion flowing and small enough to assure that everyone has an opportunity to participate.
- Asynchronous communication is effective for substantive discussion of culture and content as well as undertaking complex assignments, like a group project. Asynchronous communication can include more people and will evoke longer, more complex responses.
- One-way communication found in overviews, lectures and readings has the role of transferring intellectual content in LIS courses. Native and non-native speakers have issues that make it useful to provide one-way communication in a recorded form so that it can be reviewed.
- Bilateral communication leads to personal development. International education participants will learn about themselves by reflecting on LIS professional actions in an international environment.

Knowledge Management Content

- Interdisciplinary content, like knowledge management, is useful in initiating an international relationship between LIS schools. Most students had some related expertise to share in group learning.
- Topic breadth provides flexibility for the instructors as they work to balance pedagogy and technology, communication and content. Applied LIS students will express some frustration with the fuzzy nature of interdisciplinary content.
- Knowledge management is just beginning to be implemented in educational organizations. A focus on business or government would provide more applications for use in LIS learning.
- Learning about knowledge management and other LIS topics is enriched by the presence of cultural issues. Students learn to be more attuned to links between culture and knowledge. This sensitivity leads to more effective knowledge management applications.

This case study supports the view that distance education can be used effectively to internationalize LIS scholarship. The course reported achieved its goals of learning to learn in an international environment, achieving bilateral communication and mastering knowledge management content. As a result of providing this course, professional

knowledge and theory about knowledge management has been advanced; national LIS practices have been explored and compared; global knowledge resources have been accessed and used; services to multicultural populations have been addressed; and 32 professionals in training have learned to reflect on global issues in their personal development. As this early example is repeated and improved upon, LIS programs throughout the world can gain confidence in using distance education techniques to enhance LIS scholarship of teaching.

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