The Anytime Anyplace Degree in Information Resources and Library Science

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Abstract. The innovative distance education program at the School of Information Resources and Library Science is a model for higher education and the information industry for instructing information specialists and librarians on how to move information from place-to-place and from person-to-person. Geographically dispersed students directly experience electronic learning and communication via the Internet. Looking ahead to the future, this electronic wave of disseminating knowledge is increasingly more in demand and requires skills and expertise to successfully serve a clientele. This distance education program may be the only way a graduate student interested in information resources and library science can complete a program given his or her geographic location or other responsibilities that preclude moving near a university or driving long distances.

Asynchronous communication
Distance education
Distance learning
Groupware
Internet-based learning
Library schools

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Introduction

The innovative distance-learning program at the University of Arizona's (UA) School of Information Resources and Library Science (SIRLS) offers far-away students the opportunity to earn an ALA accredited Masters of Art degree in information resources and library science. Students experience electronic learning and communication via the Internet with skills that are essential to operate within our dynamic information environment. Educational opportunities are maximized by ease of accessing course content and contact with faculty through various communications software. Subsequently, students are required to have minimum recommended computer skills and computer technology. Looking to the future, distance learners who graduate from the SIRLS program have the skills and experience to successfully disseminate electronic information and effectively serve an information-seeking clientele.

Distance learning is not for everyone. To be a distance learner far away from the UA campus, a student must be an independent learner, know how to manage one's time, be creative and persistent in accessing resources, have a certain level of computer expertise, and be comfortable learning in a totally visual environment. The majority of SIRLS (also nationwide) distance students juggle jobs, family, and coursework simultaneously and are usually of a mature age to be enthusiastic about learning new skills and theories. SIRLS virtual courses offer a unique opportunity to garner new skills or a graduate degree anytime and from anyplace while still maintaining one's residence, job and or family responsibilities.

Asynchronous Communication

SIRLS students have been located in several states and in foreign countries such as, Spain, China, Mexico, Egypt, Ireland, Panama, and Canada. The flexibility of a student to maintain a current position of employment and remain in a chosen location while studying is important to many who aspire to earning a degree or an upgrade on information skills. Students comment on the importance of flexibility in taking classes or earning a degree in their busy lives (see Table 3),

"I think it is excellent! Particularly for people who work full-time and go to school full-time. The luxury of self-pacing and logging on when I had time was so great. More should be offered."

" Let me say that it is not only mothers with children who take advantage of these courses. Without this program, because of being in an isolated rural area I would not be able to continue my education. It also opens

up avenues for establishing networks to compare and discuss experiences in the information field that will eventually be even more valuable than the education itself."

Distant learners are able to access course materials, participate in class discussions, and contact faculty by using groupware, interactive software used by designated individuals, WebCT (Web Communication Technology). WebCT encompasses many nonsimultaneous or asynchronous components that allow distance learners to interact when convenient. The professor may use the synchronous chat-conference system, e-mail features, student-participation tracking, auto-marked quizzes, and more. The bulletin board system provides a threaded discussion that records time, date, subject of posting, and who posted the comment, making it easy to follow the thread. Group or individual Web-building projects are supported by an HTML (Hypertext Markup Language) component for creating student Web pages.

Group projects are often part of on-campus and virtual classes, because they simulate real-life cooperation and work environments and the benefits and pitfalls of collaboration. Virtual group projects are inherently more challenging because of the lack of face-to-face communication among students. Becker and Dwyer's (1998) published study focuses on students' visual and verbal learning styles and their use of groupware, and notes that visual learners report benefiting from using groupware, while verbal learners did not. All students, however, mastered the required course material and completed projects successfully.

Class e-mail discussion lists are used for discussion, announcements, and reminders. The mandatory subscription to the SIRLS general e-mail discussion list keeps students informed of program policies, procedures, and other pertinent information. The opportunity for professional socialization can occur with communication and confabulation on library and information issues that stimulate ideas and discussion that may not develop in a real-time environment; faculty, students, and alumni discuss conferences, speakers, professional organizations, and other topics related to the information and library profession.

Outside library or information professionals are regularly scheduled by the Library Students Organization (LSO), an American Library Association Student Chapter, to

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address SIRLS students on such topics as, distance learning, copyright issues, indexing, applying and interviewing for jobs, library core-values, and classification and control of information-bearing entities. Participating speakers have been librarians, a distance learning SIRLS professor from Oregon, a visiting University of Texas library science faculty, an information broker, and the Dean of UA libraries. The LSO secretary takes notes and posts them to the School's SIRLS e-mail discussion list for the benefit of all whom could not attend. SIRLS faculty also post topics of interest that generate discussion. Some of the topics and online conversations have focused on similarities and differences between patrons using libraries and national chain bookstores, gender differences and success of students in distance learning, resume writing, and the rising costs of journal subscription prices that libraries pay. Students at a distance appreciate the advantage of being included in the professional activities. Online communication also serves the distance students as a forum for inquiries about Tucson housing, meals, and transportation while planning their residency requirement.

Studies on professional socialization have shown that intellectual discourse and the development of professional community through electronic communication occur when norms, values, and professional identities are shared (Weedman, 1998). Computer-based tools have successfully been shown to encourage and maintain professional growth and collaboration. Asynchronous communication has the potential to promote thoughtful and insightful discussion, as students may reflect on a particular topic after contemplating one's own ideas in conjunction with others' points of view. Reticent students may be

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more willing to participate or feel less threatened to comment in an asynchronous mode. The intellectual and social communications among students, both on / off campus, librarians, alumni, faculty and staff promote the feeling of being connected to the program and to the University--an essential component of minimizing student isolation. Virtual "Happy Hour" chats are periodically organized for virtual conversation to strengthen the professional and social bond among geographically dispersed students and professionals. As a

final benefit, students learn how to move information through the electronic milieu and increase their value in the knowledge-seeking marketplace.

Student Support Services

The overall focus of the program is the study of interdisciplinary components as they apply to information. Areas such as, information science, philosophy, computer science, engineering management, information-seeking behaviors, and library science are incorporated into the student-centered curriculum. The School assists each student to develop a program with the help of a faculty advisor. Kathy Wilka, program coordinator, fields nonacademic questions and serves as the initial contact to help students work out the logistics of the program. All SIRLS faculty and staff use e-mail and respond to student queries regarding the program and individual courses of study.

Many SIRLS distance learning classes have a graduate assistant(s) to assist distance learners with technology problems that relate to the class goals, such as Web page

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development, computer software and hardware issues, and communication failures. Graduate assistants may also support students by fielding questions that relate to the syllabus, class requirements, and projects.

The Center for Computing and Information Technology (CCIT) at UA provides more in-depth information technology-related support, such as computer hardware and software concerns. CCIT offers a Frequently Asked Questions Web page, e-mail and phone options for contacting them for assistance.

UA library support for research and projects is essential. Students use their last names and an identification number to gain access to databases, journal articles, and indexing and abstracting services. The new Electronic Reserves system provides distance learners with reading materials. Library staff scan the documents into PDF files and post them to the Web. The materials are accessible from a faculty member's password-protected Web page to follow U. S. Copyright laws. The Fair Use copyright provisions for educational purposes are adhered to and the Library obtains permission of the copyright holder where

applicable. Students may request to interlibrary loan journal articles and monographs from other libraries to be delivered to their homes. UA libraries are in the process of developing a new service to supply and deliver UA-owned journal articles and books to a distance learner's residence. Remote users of libraries need and expect personal contact with a librarian for their information and research needs (Cooper and Dempsey, et. al, 1998). Librarians are listed with their corresponding subject expertise on the UA library

Web site.

Off-campus students rely on the University Library to supply them with online instruction resources. Lifelong information literacy skills that include information gathering and critical thinking skills are supported by UA's online instructional tutorials. UA library online services include Research Instruction Online (RIO), Winner of the 1999 *Innovation in Instruction* award from the Association of College and Research Libraries, Instruction Section. RIO's self-paced tutorials are designed to help students how to locate information and sharpen research and critical thinking skills by learning:

- To find materials owned by the UA Library
- Common characteristics of searching online databases
- How to search for and locate magazines, newspapers, and journal articles
- How to search for and evaluate info on the World Wide Web
- Fundamentals of writing a research paper

Additional online resources include citation guides, directories, thesauri, quotes, atlases, dictionaries, and tips on connecting to the Library's databases.

Admissions and Program Requirements

SIRLS admission and program requirements apply to both on-campus students and distance learners. Requirements for admission to the IRLS program encompass a prescribed level of academic and technological achievement. Applicants are expected to have a well-rounded academic background. The capacity for analytical thinking,

organizational ability, and leadership skills are important. Aside from typical letters of recommendation, a resume, minimum grade average and Graduate Record Exam scores, consideration for admission is based on the minimum requirements of:

- A written statement of introduction that outlines personal goals, objectives, and how the applicant feels a SIRLS degree will help attain these goals and objectives.

- Access to a computer with telecommunications capability, other than those located in UA computer labs

- A written self-assessment of proficiency in computer technology. Students are expected to have knowledge and working experience with using the computer as a communication tool, word-processing, spreadsheets, Web browsers, an operating system, such as MacIntosh or Windows, a database manager, and have an e-mail address.

A limited number of the most highly qualified candidates are accepted; meeting minimum requirements is not a guarantee of admission (SIRLS Web site).

Online courses require graphical Web access and minimum computer requirements: high-speed modem, direct access to the Internet, and at least a 486-based PC or equivalent MacIntosh. The SIRLS' staff is currently developing an online orientation for distance learners. Over the past two years, staff created the IRLS Resource Guide, also known as the Electronic Life Preserver. Posted on the School's home page, the Guide may be used as a tutorial to navigate through using e-mail, discussion lists, newsgroups, online chats, HTML Web authoring, File Transfer Protocol (FTP), software applications, Portable

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Document Format (PDF) files, and more. Even though virtual students tend to be more technologically adept than on-campus students, the online guide is essential (Fitzner and Wilka, 1998); being fairly conversant in computer applications allows a student to focus on the academic side of education instead of struggling with learning the course's requisite electronic components.

Each semester, SIRLS offers a minimum of two online courses that are available to all students. Required classes are Knowledge Structures I, Research Methods I, a second research methods course, an information ethics course, and two outside interdisciplinary courses that relate to the student's study goal. A review of

American Library Association (ALA) accredited school curricula shows that SIRLS is the only library school to require two research methods courses. This requirement anticipates increasing the level and quality of scholarly communication among librarians and information specialists. Courses are listed on the School's Web site. Enrollment for classes is done electronically by an automated phone system. All course materials, readings and assignments are posted in WebCT. Like all other library schools. SIRLS requires an on-campus residency. Distance learners must complete a twelve-unit residence requirement prior to completing the program, which translates to four, three unit credit classes. Students may come to campus during two, five week summer semesters, a three-week pre-session, or an intense, week-long winter intersession. To ease tuition expenses, distance learners pay in-state tuition during summer sessions. There is a six-year time limit to complete the MA degree, including transfer credits.

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Student Data

SIRLS offered its first completely virtual course in the spring 1996 semester**.** All work was distributed over the Internet, utilizing a combination of electronic tools. This included online course evaluation forms, available for distance learners to complete at the end of a semester. Data was collected from students using the Internet-based course. The data was based on a five-point Likert Scale and written comments. Data was also collected from an identical course with the same professor, conducted in a traditional classroom environment. The two classes that compared data in Teacher Evaluation Reports completed by students was Research Methods (LIS 506), taught by Professor Charles Seavey. Offered in fall 1994 was the traditional classroom format and the fall 1996 semester course was available online. See Table 1.

Insert Table I

Professor Sandra Hirsh taught Information Resource Development (Collection Development, LIS 560) in Fall 1996 in the traditional classroom format and online in the Spring 1997 semester. See Table 2.

Insert Table 2

It is interesting to compare student response means of on-campus and virtual course Teacher Course Evaluations. Both professors who taught Research Methods and

Information Resource Development (Collection Development) earned higher teacher evaluation ratings in the virtual courses, except for the rating of, "Students treated with respect in class." Both distance learning courses were equally rated by students on that particular evaluation question and were lower than their on-campus counterparts. Why would distance learners feel less respected than participants in an on-campus class? It is possible that some students left the question blank, not knowing how to evaluate the level of respect that could be communicated through electronic channels. Another possibility is that respect is more easily determined in a traditional classroom with face-to-face communication. Suggesting that the respect ratings indicate that the course was poorly executed does not match the other teacher evaluation ratings that are high.

Student Comments

Teacher Course Evaluations include four questions inviting students to respond in their own words. These responses contrast with the objective data that is also found in the Evaluations (see above) where students fill in an oval representing a level of satisfaction / dissatisfaction based on a five-point Likert Scale. A sampling of subjective student responses collected from 1995-1997 are shown and discussed here. The examples of student responses are ones that directly relate to aspects of distance learning, such as computer / technology issues, online format, students who learn from a distance and communication concerns. Student comments about textbooks, lectures, class discussions, grading, and other such statements that do not in particular pertain to distance learning components are not covered.

Insert Table 3

In reviewing student comments about learning at a distance, the use of online computer applications, such as WebCT or computer use in general, students had positive and negative experiences. Any student who chooses to enroll in a virtual class must expect

potential electronic down-time in computer systems. Complying with minimum computer configurations, such as using an updated Web browser to view frames, is essential for seamless class participation. Students stated positive comments about the option of learning from home, appreciated diverse backgrounds of participants, praised

instructors' abilities in the online format and, welcomed the opportunity to learn about and utilize new communication tools.

Conclusion

A distance learner in the SIRLS program must be prepared to commit to a rigorous academic experience. In addition to traditional academic demands, the geographically- distant student is required to be technologically-adept to communicate and interact within the class environment, potentially imposing a steep learning curve. The information / librarian professional who completes this program will reap the rewards earned from this innovative educative.

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Table 1

LIS 506 - Research Methods

Teacher Course Evaluation Reports	Fall 1994 - On-campus (Mean)	Fall 1996 - Virtual (Mean)
Overall rating of instructor's effectiveness	3.67	4.13
Overall, how much did student learn	3.11	3.70
Overall rating of this course - section	3.33	3.62
Comparison of overall course rating of instructor's effectiveness	3.41	4.13
Students treated with respect	4.44	4.20

Table 2

LIS 560 - Information Resource Development

Teacher Course Evaluation Reports	Fall 1994 - On-campus (Mean)	Fall 1996 - Virtual (Mean)
Overall rating of instructor's effectiveness	4.2	4.71
Overall, how much did student learn	3.7	4.29
Overall rating of this course - section	3.8	4.38
Comparison of overall course rating of instructor's effectiveness	3.9	4.13
Students treated with respect	4.7	4.20

Table 3
Student Comments Extracted from Teacher Course Evaluations 1995-1997

Q. What did you like best about this course?	A. "Learning more about using the computer, being able to work toward a degree at a distance."
	A. "The instructor's ability to handle the format well. She was clear, the goals of the class and her expectations were clear. I thoroughly enjoyed this class"
	A. " The interaction between the instructor and students and the widely different backgrounds everyone had in the course. Since each student had different experiences, it made the lectures and readings more meaningful when they applied them to their own work."
Q. What did you like least about this course?	A. "The WebCT. The system was much harder to use than needed. It made the course harder because we had to learn a whole new system to make our homepage and such. We also had several technical problems which impeded our communications."
	A. "The computer difficulties--frames capability in particular--made the course difficult many times and I'm not convinced that the frames really added much that couldn't have been done in tables for people who had older Web browsers."

Table 3 (Continued)
Student Comments Extracted from Teacher Course Evaluations 1995-1997

Q. Do you have any additional comments about the computer-based distance education format of the course?	A. "I appreciated the extraordinary efforts to give the class a wide variety of experiences with communication formats."
	A. "I prefer live classes, but there were several points of access, and active e-mail and bulletin board discussions which helped keep me abreast of what

	was going on."
	A. "The groupwork certainly made for a stressful beginning to the semester. With so many people having trouble with hardware / software, it made group communication by WebCT difficult. Regular e-mail (listserv) was a much better format for dependable communication."
	A. "I think it is excellent! Particularly for people who work full-time and go to school full-time. The luxury of self-pacing and logging on when I had time was so great. More should be offered."
	A. " Let me say that it is not only mothers with children who take advantage of these courses. Without this program, because of being in an isolated rural area I would not be able to continue my education. It also opens up avenues for establishing networks to compare and discuss experiences in the information field that will eventually be even more valuable than the education itself."