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Redefining roles: librarians as partners in information literacy education

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Abstract

UWired is a collaborative effort at the University of Washington to bring electronic communications and information technology into the service of teaching and learning. This paper addresses the role that librarians have played in transforming undergraduate courses, pedagogy, facilities design, and faculty development to bring information literacy into departmental curricula.

Introduction

As research and teaching increasingly rely on global networks for the creation, storage and dissemination of knowledge, the need to educate information-literate students has become more widely recognized. Students often lack the skills necessary to succeed in this rapidly changing environment, and faculty need training and support to make use of new technologies for effective teaching and learning. The current environment provides an opportunity for librarians to play a key role in the evolution of an integrated information literacy curriculum, in contrast to past efforts which were sporadic and rarely programmatically based.

In a 1989 report, the American Library Association states that "Information literacy is a survival skill in the Information Age" (1), and calls for a restructuring of the learning process itself, rather than the curriculum. Revamping the process would ensure that students

- **know when they need information**
- **identify what information will address a particular problem**
- **find the needed information**

- **evaluate the information**
- **organize the information**
- **use the information effectively in addressing the problem**

There are many challenges inherent in changing the learning process, and often the results are mixed. However, since our patrons, collections, and campus connections span all disciplines, librarians are uniquely situated to create and foster new ways of teaching and learning information technology. According to Fowell and Levy, "Information professionals have the opportunity to take a leading role in developing and delivering the learning support strategies which will be appropriate to this new environment, acting as significant culture change agents in their institutions" (2). Perhaps our greatest challenge is to act on this opportunity, and create the necessary changes.

Traditional library instruction programs at U.S. colleges and universities have achieved some success in changing institutional culture, but this outcome is by no means the norm. Of note is the program at Earlham College in Richmond, Indiana, which has long had the support of librarians, faculty, and administrators. Efforts elsewhere have not been as successful; programs are often dependent on one or two people, and changes in curriculum and faculty can mean the demise of the program. However, this experience in connecting library instruction to appropriate assignments has given librarians a unique perspective in approaching uses of technology in teaching and learning. Rather than using technology for its own sake, librarians have encouraged its use as a tool to facilitate the learning objectives of the course or assignment. As discussed in Chickering and Ehrmann's "Implementing the Seven Principles: Technology as Lever," technology is not neutral, so careful choices need to be made to enhance learning outcomes (5). The 1987 study by Chickering and Gamson (6) on pedagogical principles defined good practice in undergraduate education as:

- **encouraging contact between faculty and students;**
- **developing reciprocity and cooperation among students;**
- **using active learning techniques;**
- **giving prompt feedback;**

- **emphasizing time on task;**
- **communicating high expectations;**
- **respecting diverse talents and ways of learning**

Thus, technology itself may provide a positive impetus as Rader states, "developments in education and technology are beginning to help academic librarians achieve new breakthroughs in integrating information and technology skills into the curriculum" (3). Other discussions also note that technology is changing the role of librarians, "from the keeper of the books to that of network navigator," (4) and is providing the opportunity for librarians to become more active participants and leaders in the educational process.

The University of Washington: Addressing Information Literacy Needs

In response to the challenges of incorporating technology into teaching and learning and the creation of community at a large public university, the University of Washington (UW) has developed a holistic, campus-wide approach called UWired. The primary goal of UWired is to create an electronic community in which communication, collaboration, and information technologies are integral to teaching and learning; ultimately, the aim is for information literacy to be a hallmark of a UW degree. In this process of restructuring both pedagogy and paradigm, librarians are active partners in the development and implementation of UWired initiatives, which address faculty development, active student learning, and facilities redesign. Librarians, faculty, computing staff, administrators, and students from a number of units across campus are collaborating in this project, including Undergraduate Education, Computing & Communications, University Libraries, and University Educational Outreach. UWired seeks to go beyond technology as an end in itself, and instead offers sustained discipline-specific instruction, useful educational applications of technology, faculty and librarian development, and the requisite facilities and infrastructure.

UWired is not a new department or administrative construct, but rather a collaborative effort calling on staff from the participating campus departments. In 1994, UWired began as a planning group with a pilot project to enhance the extant Freshman Interest Group program with information technology instruction. Informal weekly meetings were attended by a rotating cast which included, at various times, computing professionals, librarians, undergraduate education staff, students, facilities design staff, educational assessment staff, and vendor representatives. Responsibility to act was delegated to the planning group and participants brought a willingness to do what was necessary to get the program underway, in addition to continuing their regularly assigned responsibilities within their home unit.

After the initial pilot project, additional UWired initiatives were launched which required a more formal structure. Steering, Curriculum, Evaluation, and Equipment committees were created, and, in the program's second year, a program coordinator was hired. Ultimately, program participants have been accountable to a group composed of the heads of each campus unit involved: the Director of Libraries, the Dean of Undergraduate Education, and the Vice President for Computing and Communications. Since its inception, UWired has been fortunate to have the full support of these and other key University administrators, including the Provost. For the first three years (1994-96), program funding came from vendor contributions, endowment funds, capital projects, the Provost, and the collaborating units. In the budget cycle for the 1997-99 biennium, the units involved submitted a interdepartmental funding request.

This paper will focus on the major UWired initiatives which illustrate various models for changing the librarian's role on campus and in the community. Additional information about the UWired program is available at *http://www.washington.edu/uwired*

The Freshman Interest Group Program

The Freshman Interest Group (FIG) program has been a successful UW initiative since 1987, enrolling several groups of 20-25 new students in a thematically linked suite of courses that they take together during their first quarter on campus. FIG groups also meet for a one-credit class once each week with a peer instructor to discuss issues surrounding the adjustment to campus life and work, such as campus resources, thinking about a major, registering for classes, time management and study skills, discussion of social issues, and informal contact with faculty. With 34,000 students, the UW is larger than the hometowns of many of our undergraduates, most of whom are from Washington state. Creating learning communities which ease the transition to college life is one of the main objectives of the FIG program.

In the fall of 1994, three of the forty-five FIG groups were selected to be the pilot effort of the UWired program. Students in these FIGs enrolled in an additional two-credit technology seminar which was taught by a librarian. During the pilot year, students, faculty, and librarians were each loaned a laptop computer. In each of the following years the FIG program has continued to experiment with integrating electronic communications and information technology into its curriculum. Due to the need to scale the program, laptops were no longer loaned to all participants, but a computer equipped facility, the "Collaboratory," was constructed. Collaboratory facilities are discussed separately, below. In 1995, eight of sixty FIGs included a UWired component and in 1996 students in all sixty of the FIG groups received a baseline introduction to electronic communications and information technology. In order to scale the program to reach the 1200 students participating in the 1996 FIG program, the instructional role shifted from librarians to the sixty peer instructors, who teach the one-credit course, "General Studies 199: University Resources, Information and Technology."

The UWired Curriculum Committee, composed of librarians, computing professionals, undergraduate education staff, and students, identified core skills appropriate for introducing students to campus technology. The committee then developed instructional modules for the three core skill areas: electronic mail, the World Wide Web, and library databases. Educational objectives, instructional materials, and sample lesson plans were developed for peer advisors to use. Since many of the peer advisors were already familiar with e-mail and the Web, training focused on how to teach these skills and incorporate their use in General Studies 199. Peer advisors participate in an extensive training program prior to teaching, and are introduced to curricular materials at that time. While the peer advisors introduce e-mail and Web resources, librarians continue to provide instruction on the use of library databases, which usually occurs in a writing course requiring library use. The current FIG curricular materials can be viewed at: *http://weber.u.washington.edu/~zald/uwired/peer.html*

Evaluations of the 1994 and 1995 UWired FIGs showed that UWired students were much more likely to know about and use campus computing resources than students in other FIGs. UWired students used e-mail, used it for more academic activities (contacting faculty, contacting other students about class projects), and with more comfort, than did non-UWired students. Students in UWired FIGs used UWIN, the campus information network, 45% more often than non-UWired students. UWired students were five times more likely to know how to evaluate World Wide Web information, used the Web twice as frequently, were better able to describe specific ways this information would help them, and felt more comfortable using the Web to find information than non-UWired students. In addition, student comments emphasized how e-mail helped them to feel connected (7).

Librarian involvement with the FIG program illustrates many of the dramatic role changes brought about by the UWired collaborations. Prior to 1994, librarians would occasionally provide instruction sessions for individual FIG groups, though the process for doing so was inconsistent. As a result of the collaborations fostered by UWired, librarians have contributed to a permanent expansion of the FIG curriculum to include a purposeful introduction to the campus computing environment as well as a more consistent introduction to library resources. The UWired FIG pilot program demonstrated that appropriate uses of technology to achieve clear educational objectives can be extremely effective, and librarians played an active role in defining the uses of technology. In order to expand these applications to other areas of the curriculum, librarians and other staff, in consultations with faculty, have found pedagogical guidelines such as the following to be very helpful.

Intercollegiate Athletics

In 1995 another pilot project was undertaken to strengthen the academic experience of University athletes.

Information and technology training and laptop computers were provided to the coaches and team members of both the men's and women's basketball teams. These two relatively small teams provided a test group with gender equity and demanding travel schedules that took the student athletes away from campus during peak academic periods. Students demonstrated they were able to continue working on class projects while away from campus, connect to the campus network to use information resources (library databases, the Web, campus information), remain in e-mail contact with professors and classmates, and turn in assignments through file transfer. The students improved their skills in evaluating online sources, using source material properly, and citing electronic and printed sources. The laptops expanded the academic day and helped address the severe time constraints under which student athletes operate. While we cannot draw a clear correlation, the women's basketball team achieved a cumulative GPA of over 3.0 for the first time ever, for which the coaches credit UWired. The athletic department included a computer lab in their redesigned academic center and additional teams received technology training in 1996-97, including baseball, softball, crew, gymnastics, and men's tennis.

Upper Division Classes

Creating information literate graduates means more than working only with freshmen. With this goal in mind, the UWired program expanded into content courses beginning in the winter of 1996. Faculty proposals for upper-division courses which offered innovative approaches to using technology were sought through a campus-wide proposal process and were reviewed by the Steering Committee. A subject-specialist librarian was assigned to each course selected, and technical support and training were also provided to the classroom instructor. Offerings so far include courses in Psychology, English, Communications, Geography, Environmental Statistics, and Human Biology, among others. Librarians work with faculty to determine their respective roles in these courses and to plan the functions that technology plays in delivering course content.

Classes may be taught entirely in the Collaboratory or in a combination of lecture hall and hands-on laboratory time. In some cases the librarian provides bibliographic instruction-type sessions using the online resources available in the Collaboratory, while in others the librarian is more of an on-site technical and content resource person assisting groups or individuals. Unlike the standardized approach used with the FIGs , the incorporation of technology with the course content differs dramatically between the various upper division courses, reflecting the objectives of each course and the nature of the various disciplines.

For example, students in the Introduction to Economic Geography course were required to use e-mail, access the syllabus on the World Wide Web, use the library databases, and create a web page as a final presentation of their research project. The English composition course in Writing Hypertext required that students build a home page early in the quarter, then expand it individually and in groups as the class progressed. One of the best examples of a course in which information technology is integral to teaching and learning is a senior honors seminar in the English department.

This course, Czech Dissident Literature in a Civil Society, has been taught three times, and each time the use of technology has increased, as has the collaboration between students, faculty and librarians. In this course, students read English translations of the works of Hasek, Kafka, Kundera, Havel, and others, in an attempt to define a national literature for a republic which has for centuries fought to establish a voice for itself. The English Studies and the Slavic Studies librarians were assigned to the course, and met with the classroom instructor several times before the quarter began. The instructor was, by his own account, about one step ahead of his students: the first time he had seriously worked with a desktop computer was the month before the class began. UWired was able to expedite putting a connection to the campus network in his office and provided him with a laptop computer and appropriate training. In the first iteration of the course, students learned to use e-mail, library resources for literature and East European materials, and had a basic introduction to the Web; for senior English majors of 1996, these were skills they may well have left the UW without learning had they not taken this course. The second time this course was taught, students used the same level of technology, plus had individual meetings with the librarians as they prepared their research reports.

In the spring of 1997, the instructor, the students, and the course have reached a level where the technology complements the content and enhances the learning process. As the course began, nearly everyone enrolled had an e-mail account-a year is a lifetime in terms of technology and the learning curve. The first two weeks of the course were devoted to establishing a fairly high technology baseline, with instruction covering topics such as listservs, Web design, HTML editors, and the potential uses of the Web for East European research, literary or otherwise. The

next few weeks were content-based, with ongoing listserv and classroom discussions about the literature, and library instruction sessions covering literary research sources and methods for locating information on Eastern Europe. These sessions tied in with students' ongoing projects, and they were comfortable asking either the instructor or a librarian for assistance with the course.

Obviously, not all of the upper-division courses taught through the UWired program have the same mix of content, technology, and faculty and librarian collaboration. Integrating information literacy into content classes is much more an individualized process than it is with the standardized FIG sections; however, the concepts remain the same, and provide a variety of models for expansion.

Facilities Design

Computer-equipped teaching and learning spaces are an important facet of the program's success, and librarians have been active in the design of these facilities. For the pilot FIG program, a new classroom, the Collaboratory, was constructed in the Undergraduate Library. A conscious effort was made in the design of this space to avoid the replication of a typical lecture hall where computers are placed in straight rows facing the front of the room. Rather, a non-traditional "podular" arrangement features tables located around central posts which supply power and ethernet connections. In these collaborative spaces, students can easily share a workstation or move between workstations at the same or another pod. Initially, the Collaboratory was a "plug and play" facility for the laptop computers; however, this space was expanded and 28 workstations installed to support the expansion of the FIG program and the Innovative Courses. A second Collaboratory houses 60 workstations and is used primarily as an open access lab which can be used for larger classes. Both facilities are staffed with technical support personnel. In addition to design input, one librarian managed each of the construction projects, working with UWired parties (librarians, computing professionals, educational program staff), design staff, construction crews, and furniture company representatives.

Consultants

In another effort to bridge the gap between providing computing access and providing instruction in how to use technologies to a particular purpose, librarians are now staffing the Collaboratory which is open to student use when it is not scheduled for classes. Students employed by Computing & Communications provide technical support to the lab users, and librarians provide assistance with research queries. This approach has involved librarians from all over the UW Libraries system, increasing the technological expertise and visibility of the librarians. This cross-functional staffing of a computing facility is a further experiment in relocating the information professional to provide instruction at the point of use, whether that be in the classroom or elsewhere in the student's research process.

Faculty Development

Faculty training and development is critical to the integration of electronic communications and information technologies into departmental curricula, and a number of training initiatives are underway as a part of the UWired effort.

For the initial FIG pilot, a week-long training program was offered to the faculty, librarians and peer advisors involved. Since then, a variety of workshops have been offered, and are now highlighted in a separate UWired section of the Computing & Communications Training Catalog. Classes developed for teaching faculty, teaching assistants, and librarians are available on a wide range of topics, and are taught by the people best able to teach them regardless of departmental affiliation. Computing professionals, instructional design staff, librarians, and students have taught classes, a sampling of which are listed below. A complete list is available at *http://www.washington.edu/uwired/workshops.html*

- Using E-mail for Class Communication
- Effective Use of the Web for Education: Design Principles and Pedagogy
- Introduction to Educational Resources on the WWW
- Teaching Students to Think Critically About Internet Resources
- Incorporating Graphics Into Your Web Pages

- Introduction to PowerPoint for Lectures
- Copyright, Cyberspace, and Education

In May of 1996, the Center for Teaching, Learning and Technology was opened which provides consulting, training, and support to faculty who want to retool courses to integrate learning technologies. A team of consultants, including an instructional design specialist, a computing professional, and a librarian, are available to assist faculty with course-related technology projects. In addition to working with specific courses, drop-in workshops on a variety of topics are offered allowing faculty, librarians, and teaching assistants another avenue to learn technical skills.

The UWired Teaching and Technology Lecture Series provides another faculty development opportunity. These sessions cover broad programmatic issues or showcase specific pedagogy techniques, and, like the hands-on workshops, are presented by faculty, librarians, administrators, computing center staff and invited off-campus guests. Previous lectures have included these topics, among others:

- Language Learning, Teaching and Technology
- The Science Learning Collaboratory
- New Markets, Old Technology: Telecourses And The University
- Dodging Potholes in the Information Highway: Appropriate Uses of Technology
- A Change in Campus Culture - Teaching Teaching: Practical Considerations
- Building Electronic Communities

Librarians play a vital, and evolving, role in collaborating with faculty to implement the changes necessary for an effective information literacy curriculum. From workshop presentations to one-on-one consultations, faculty see librarians as more than a collections-related resource, and more of a service and training-centered resource. According to D.W. Farmer, barriers that prevent faculty from changing their teaching methods and course content are mostly attitudinal (8); the UWired model has allowed both faculty and librarians to step out of their normal roles and transform their perceptions and teaching strategies.

Outreach

A number of factors, both external and internal, have contributed to UWired's involvement with outreach activities. There is increasing interest among the educational and political leaders in the State of Washington in developing a more seamless K-20 educational network, where students can move smoothly between institutions to achieve their educational goals. UWired has played a part in exploring the role which a research university can play in the K-20 educational network within the state of Washington.

For example, in 1996 the UW sponsored two week-long symposia for community college staff to discuss both the infrastructure and pedagogical issues related to technology. The community colleges sent teams much along the lines of the UWired model: they were composed of a faculty member, a librarian, a computing professional, and an administrator who was involved with infrastructure decisions. In the state of Washington, there is already a strong link between the two-year and four-year institutions of higher education, as a large number of students complete two years of undergraduate work in a two-year community college, then transfer to a four-year school. By way of illustration, admissions data shows that in the fall quarter 1995, 71% of transfer students enrolled at the UW had previously attended a community college elsewhere in the state (9). In sharing the expertise of university faculty and staff with colleagues in the community colleges, we can explore issues to ensure that the education received by students who plan to transfer will prepare them to transfer smoothly, complete their education in four years, and succeed in a different academic environment. The lifelong learning skills in information and technology play an important role in a student's smooth transition between educational institutions as well as between school and the workplace. One of several ongoing outreach efforts as a result of the symposia is the invitation extended to a UW librarian by a local community college to sit on an advisory panel to discuss curricular integration of information and technology skills.

Another outreach project involved sponsoring a day-long teacher in-service day. More than 350 teachers and librarians from the Seattle Public Schools came to the UW campus to participate in forty different workshops offered by faculty, computing professionals, librarians, and university staff. Topics for these ranged from hands-on Web training to issue-based sessions on copyright, grant funding, and the impact of technology on education, to

specific software applications. While there were many contacts between the University and public schools before this in-service day, the event stimulated increased interest in and awareness of these possibilities and a coordinator has been hired to facilitate these endeavors. In addition, there is an ongoing conversation between public school and university librarians which had not previously existed.

Conclusion

UWired continues to be a valuable opportunity for librarians to create new professional roles and to collaborate with groups from across the university in a networked educational environment. As partners in the educational process, we are increasingly perceived as highly trained technical and content experts available to administrators, faculty, and students. In many ways our experience illustrates the principles described by Fowell and Levy, who note "the emergence of a para-academic role for the subject/information librarian, entailing greater involvement in facilitation of, and support for, resource-based open learning . . . as the librarians play a far more active role in the support of teaching, learning and course development." (10) This experience has been both invigorating and empowering as we have realized, and demonstrated, our effectiveness as instructional resources.

Librarians' roles are not the only ones that have changed with the formation of UWired; the roles of our users and colleagues, including faculty, students, and staff from around the University have changed as well. Students in UWired classes are much more active participants in the education process, and they, too, have proven themselves to be instructional resources as they work with each other, their instructors, and librarians. As noted, faculty are overcoming some of the barriers to change as their comfort with technology and their collaborative efforts increase. For librarians, these changes have led to increased communication, improved services and the cooperative leveraging of resources. Our work with designing and implementing curriculum-based information literacy instruction has, ultimately, redefined our role as central to the mission of the University.

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