

We will not live in a true information society unless—and until—we ensure that people have access not only to information, but to cultural content. We will not live in a true information society unless—and until—people have the skills and the resources to use this content. We will not live in a true information society unless—and until—public policy makers recognize that an informed citizenry is a public good that benefits us all. We will not live in a true information society, we will not achieve equal opportunity and justice, unless and until—all people have the library services they need to learn, live, work, participate, and enjoy our democracy (Schuman, 1992, p. 3).

The vision of a democracy in terms of equitable participation of all people in an information society, as expressed in the above quote, symbolizes the underlying spirit of this paper. The paper focuses on issues of social equity, community building, and the role of Library and Information Science (LIS) education via service learning, to develop democratic values in students to work with marginalized users in ways that promote the empowerment and self-fulfillment of such individuals. The terms “marginalized” and “disenfranchised” are employed interchangeably throughout the paper to recognize the collectives of individuals and communities who are disempowered in society. The author uses these terms at different places in the paper to recognize the importance of equitable representation of all forms of marginalities in society.¹ The paper also acknowledges the strengths, assets, and capacities of all individuals and communities, and calls for efforts in academia to promote the nurturing of these resources that may lead to individual, social, and community empowerment.

Identifying service learning as an important effort towards community building, McCook (2000) defines such initiatives as “projects of relevance that will prepare [students] for engaged citizenship” (p.164). Service learning activities are directly tied to service integration ideologies that promote citizen engagement with students in academic settings based on collaborative strategizing of local capacity and resource sharing for community development and civic renewal. Two central elements in service learning activities are: 1) to meet community needs in terms of what the community finds important, and 2) to structure educational components that challenge participants to learn from, and about, their experiences in a critical manner. Service learning activities provide practical learning opportunities to students since what participants experience, conceptualize, and learn, further informs their service (Mints & Liu, 1994).

Service learning has strong links to John Dewey’s educational and social philosophy in terms of connecting action to reflection, learning from experience, reflective activity, citizenship, community, and democracy (Giles & Eyler, 1994; Cone & Harris, 1996; Varlotta, 1997). Service learning endeavors help apply

knowledge to practical issues and engage universities to become active partners in the quest for solutions to contemporary social, civic, economic, and moral problems (Boyer, 1990). In the context of LIS, service learning activities are symbiotic for they contribute towards development of engaged service and socio-humanistic angles to the teaching of librarianship that has recently focused on the technological solutions to information problems. Also, service learning partnerships help improve public communities and contribute to localized capacity building.

Developing inclusiveness and nurturing the engagement of disenfranchised populations are two characteristics of service learning that make it especially relevant as a methodological strategy in the context of the “digital divide.” The digital divide, a much written about phenomena in recent years, is described as the obvious and troubling gap between those who have access to use computer technology and the Internet and those who do not (Katz & Aspden, 1998). National studies on the digital divide have revealed such disparities in information technology access and use to be along socioeconomic lines (NTIA, 2000, 1999; Bishop, Mehra, Bazzell, & Smith, 2000). It is important to understand the digital divide as embedded in larger sociocultural, socioeconomic, and sociopolitical realities (Mehra, Bishop, Bazzell, & Smith, 2002) that are experienced by individuals marginalized through variables such as gender, race, ethnicity, age, geography, income, skill, and other factors (Novak, Hoffman, & Venkatesh, 1998; Lenz, Straubhaar, LaPastina, Main, & Taylor, 2000). Through service learning, we as LIS professionals and educators can provide experience and training to students to work with groups that lack access to technological resources. Such efforts will develop sensitivity in LIS students towards the realities, experiences, and needs of marginalized populations. This will go a long way to support democracy, equity, and social justice as people from LIS and disenfranchised users work together to take action and change the dispersal of information systems that support the status quo.

This paper documents existing trends in service learning activities practiced in LIS schools across the United States through the findings from two studies. The first study shares highlights from a question-based survey that elicited responses from faculty at a major LIS school in the United States about service learning activities incorporated in the courses they taught during the year 2002. The second study presents key aspects from content analysis of websites of the top 10 ranked LIS schools in the United States that identifies potential areas where service learning activities can be incorporated or strengthened in LIS education. The two studies taken together provide complementary feedback. The first study of faculty responses specifically identified existing service learning efforts and issues at one major LIS school in the United States. It provides a narrow—yet rich—view in terms of detailed information about service learning

via expert opinion at one LIS school. The website analysis of the top 10 LIS schools in the United States extends and substantiates information in the area of research to explore service learning representation in a broader realm within the profession. Though it does not provide a comprehensive review of LIS schools and focuses only on their master's programs, the study does provide insight on the general trends in LIS education.

Based on findings from the two studies, this paper concludes with a call for conscious efforts by LIS schools to train future students to engage in participatory action research (PAR) related activities in service learning and to establish a community informatics (CI) track in their master's programs. Both constructs of PAR and CI have strong ties with service learning owing to their roots in social justice philosophies. PAR involves participation of traditionally marginalized community members as equal contributors and beneficiaries in the process of conducting research (Freire, 1974). CI involves the study of how community processes and interactions, and civil society in general, mutually function, interact, interfuse, and are affected by the use of Information and Communications Technologies (ICTs) (Gurstein, 2000). In the context of contemporary developments in a networked information society, CI provides a community-based theoretical and conceptual framework, whereas PAR provides the underlying democratic philosophy, and service learning provides one overarching community building strategy. The three constructs linked together in LIS education establish a clear, concrete, and cohesive path towards actualization of the vision to promote overall community empowerment and social equity.

In LIS education, concerted efforts within faculty, department, and university levels to support PAR and establish a CI track in master's programs must go beyond facilitation and formalization of connections between students and community stakeholders in service learning initiatives. Such efforts will also: 1) operationalize social justice efforts, 2) systematize LIS study, action, and research towards community development, 3) establish credibility in the public and in the field towards recognition of the LIS professions as agents of social equity, and 4) struggle to build equality and the empowerment of disenfranchised populations.

The Rosy Picture: LIS as a Service-Oriented Field

Before exploring the existing trends in service learning activities practiced in LIS schools across the United States, it is important to identify a few historical moments in librarianship and LIS education—which has been, and will always be, a service-oriented profession trying to meet the information needs of diverse users (Ranganathan, 1931; Shera, 1968). Historical accounts of libraries in the United

States and around the world show that during different times the essential role of libraries is two-fold. The first role is to provide means of organization and management of the ever-increasing flow of recorded knowledge. The second role is to develop organizing mechanisms to provide access to its collections for diverse user communities based on an understanding of the users' needs and expectations (Miksa, 1991).

In building appropriate systems and relevant services to perform their essential functions, libraries were significantly impacted by prevailing sociocultural and sociopolitical climates as well as the technological developments during different times. Over the years, a common feature in the function of libraries is their role as a service-oriented information resource center that provides local, regional, and global information to the public in terms of what is useful to them. For example, Rayward (1994) in his historical analysis of the work of great LIS revolutionaries from the mid-seventeenth century onwards, shows how LIS visionaries provided access to the body of world knowledge based on: 1) ensuring public service as local neighborhood centers to cater to local needs, and 2) developing social networks and collaborations with other librarians from around the world. In contemporary times, the role of libraries (particularly public libraries) as local centers that make knowledge and information available to all users is identified in the resolution *Principles for Public Library Service* (based on the *UNESCO Public Library Manifesto*) that was passed by the U.S. National Commission on Libraries and Information Science (NCLIS) on April 7, 1999 in Ann Arbor, Michigan.

In the 1960s and 1970s, there was a shift in librarianship towards information science, especially owing to the growing use of computers as a means to access information (Shera & Cleveland, 1977). Even at that time, Shera (1983) argued for a focus on library issues such as acquisition, organization, interpretation, and service to users, with information technology being a tool to achieve the ends. With the development of different kinds of libraries—such as corporate libraries, special libraries, academic libraries, and public libraries—librarians are meeting the challenges of the evolving needs of society in the information age. Across the board, librarians are providing service to different kinds of user communities by bringing in the computer within their traditional domains. This has led to the development of: 1) online catalogs, 2) creation of electronic collections, 3) use of computer labs or access centers in library settings, 4) provision of training users to develop computer-based skills, and 5) the extension of traditional reference to provide digital services. In the modern age of the computer and the Internet, the primary role of LIS educators is to train and prepare students to develop skills that will help them provide service to users in terms of users' changing needs in the new technological environment.

The Not-So-Rosy-Picture: Context of the Digital Divide

The third demographic study on the digital divide published by the National Telecommunications and Information Administration (NTIA) entitled *A Nation Online: How Americans are expanding Their Use of the Internet* (2000)² controversially argues that over 50% of all Americans are online and claims that the digital divide is almost closing. Recent rebuttal reports published by The Children's Partnership (2002) and the Consumer Federation of America (2002) claim that substantial divides continue to exist and that many groups are still marginalized in terms of access as well as computer and Internet usage. Other scholars draw attention to the fact that roughly half of Americans are not "connected" at home, and argue that there is no reason to develop a sense of complacency based solely on debatable numbers that indicate the digital divide to be bridged (Borgida et al., 2002; Jackson, Ervin, Gardner, & Schmitt, 2001).

Obviously, the answers to address inequity in ICT and computer usage lie elsewhere and go beyond traditional digital divide studies. A problematic aspect about these studies is the sheer simplification of digital divide discourse that focuses merely on issues of access and connectedness measures, as if nothing else matters (Vengerfeldt, 2003). Generalizations based on quantifiable statistics do not account for diversity of human experience, or in other words the "varied uses people make of the Internet and the specific gratifications gained from these interactions" (Cho, Zuniga, Rojas, & Shah, 2003, p. 47; Lazarus & Mora 2000; Norris, 2001). Short-sighted attention to ICT access also overlooks dimensions of users' skills in terms of their abilities to use the technological tools and understand the content of materials that are accessed (Carpentier, 2003; Hargittai, 2002).

Some pertinent questions in digital divide policy decisions that help go beyond access are: "access for what?," "access for what purposes?," "access for whom?," and "access to what?" (Clement & Shade, 1998). Various "complex measures of access—not access to the technical infrastructure—but access to the social infrastructure, such as access to education (measures include literacy rates) and content (the ability to produce as well as consume information)" (Shade, 2002, p. 1) address deficiencies in earlier digital divide studies. Clement and Shade (2000) present a multi-layered model of access in terms of *The Access Rainbow*. In this model the upper and lower layers (representing social characteristics and technical dimensions respectively) are necessary support mechanisms for the most important middle content/service access layers that provide usefulness of the system in terms of its utility to users.

Providing service to users in terms of what is useful along with technical and social access, however, is not such a simple task, especially when marginalized populations are involved. We know that technology is not apolitical

in the sense of being detached from its social context. “Technology . . . not a neutral ‘thing’ that arises out of disinterested scientific inquiry . . . is itself a social product that has arisen as a result of political and ideological processes and institutions and its particular form has to be explained in terms of such processes” (Street, 1984, p. 65). For a long time, digital divide solutions ignored or bypassed the argument that presented technology to be embedded in larger social and political circumstances of disenfranchised users. Access to ICTs is “embedded in a complex array of factors encompassing physical, digital, human, and social resources and relationships. Content and language, literacy and education, and community and institutional structures must all be taken into account if meaningful access to new technologies is to be provided” (Warschauer, 2002).

In this context, it is important to point out that marginalized experiences based on various digital divide variables (gender, race, ethnicity, age, geography, income, skill, etc.) *do dictate* the who-what-where-why-when-how factors in shaping the information needs, information uses, and information seeking strategies and processes of disenfranchised users (McIver, Jr., 2001). For example, race and gender based experiences significantly determine some of the following aspects in information seeking: 1) *who* an individual talks to and from whom they get information, 2) *what* are the information needs of a person and *what* resources people use to fulfill those needs, 3) *what* places people feel comfortable in going to in order to find relevant information meaningful to their lives, 4) *why* they feel comfortable in going to (or not going to) some places and talking (or not talking) to certain people, 5) *when* they seek information during different times in the search process, and, 6) *how* users make sense and cope in the world.

The author believes that owing to a search for simplicity, politics, naiveté, inconsideration, self-centered vision, commercial interests, or other reasons, individuals, institutions, organizations, social mores, government propaganda, and marketing agencies often paint a “perfect” rosy picture of most information use contexts. This has resulted in resource design, policy decision, academic research, and other information planning initiatives overlooking issues related to the who-what-where-why-when-how factors (based on socioeconomic and sociopolitical experiences) in information seeking. It has contributed to an immediate need for recognition of the who-what-where-why-when-how factors in information seeking of disenfranchised users to provide a holistic understanding of their experiences (Kingrey, 2002). For example, in order to comprehensively understand information seeking and searching behaviors that involve several levels of human existence, Bates (2002) presents an integrated model that incorporates individual, social, and cultural dimensions with the underlying biological and anthropological layers of experience. Similarly, in order to identify the complete embedded meaning, Forsythe, Buchanan, Osheroff, & Miller (1992)

draw attention to the need for understanding contextual factors while interpreting information seeking messages. Since the who-what-where-why-when-how factors are important in information seeking, digital divide research needs to acknowledge and represent these factors in order to initiate any kind of social change (via ICTs) that may impact the lives of the disenfranchised in real and meaningful ways (Mehra, Merkel, & Bishop, in press).

As agents in a service oriented profession, librarians, information professionals, and LIS educators can play a significant role in building knowledge about the who-what-where-why-when-how factors in information seeking of marginalized users. However, work of scholars like Chatman (1985), Dervin (1980), Bishop et al. (1999) has shown that libraries are the last places where marginalized individuals seek information. Research on information seeking behaviors of marginalized populations (such as women of color, the elderly, low-income individuals, women in rural and remote areas, sexual minorities) demonstrates that these groups often prefer (for various reasons) to seek information from their informal networks, as compared to formal channels such as libraries and information centers (Bowles et al., 2000; Johnson & Barer, 1990). With this fact in mind, LIS educators must be willing to take the initiative to make libraries and other settings of information provision more open and welcoming to individuals belonging to under-represented populations. One way to actualize this goal is to acknowledge larger realities associated with the digital divide and to address the who-what-where-why-when-how factors in information seeking of disenfranchised populations via the adoption of service learning activities in courses that we teach.

As noted earlier, service learning can provide experience and training to students to work with disenfranchised communities and build sensitivity towards marginalized realities. On a broader level, service learning can also create awareness in students of the need to address information equity issues in LIS education, an aspect that most students overlook, or are unaware of, since the topics are meagerly covered in library literature (King, 2002). Once students complete their studies and join the profession in libraries and information-related settings, they will take their experiences in service learning and ideals of social equity with them to these new work environments. This will help instill service learning values and ethics in these environments that will broaden the catchments area for supporting empowerment of marginalized users and promoting social justice via the information professions.

Participatory Action Research (PAR), Community Informatics (CI), and Service Learning

PAR and CI are two constructs that deserve special attention in the discussion of service learning and empowerment of disenfranchised individuals. PAR emerges from Paulo Freire's philosophical theories that articulate the role of individuals to society and invite critical reflection on race, class, and power dynamics (Deans, 1999). PAR involves the subjects and beneficiaries of the research project in all stages of the research process (Brown, 1985; Fals-Borda, 1979). It helps empower disenfranchised populations to take action in their own hands to improve their position in society (Callaway, 1981; Gaventia, 1993; Horton, 1990; Maguire, 1987; Stanley & Wise, 1983). PAR has significant application for mobilizing community resources in today's information-based society because it is based upon interweaving people, power, and praxis (Sohng, 1995). PAR in service learning will enable LIS students and faculty to become active participants in the process of community building and community development. LIS professionals should aspire towards bringing about social change via PAR by making the research process more inclusive of disenfranchised individuals and providing opportunities to develop the strengths and capabilities of marginalized community members. Such efforts will contribute towards striking the deep-rooted foundations of prejudice and discrimination that underlie inequalities in the distribution of resources and power in our society.

There are two important aspects in service learning, that are essential in realizing the vision of social equity. First, service learning develops the ability in LIS students to initiate projects in disadvantaged communities and become more committed to the needs of marginalized individuals and groups (Ogden & Claus, 1999). Second, service learning helps to build local capacity in disenfranchised communities (Schneidewind & Davidson, 1983) while simultaneously challenging LIS students to expand their thinking and approaches. There is a subtle distinction between the two with regard to the locus of power in terms of who takes the action towards bringing about change. In most examples of service learning, action taken to bring improvements lies usually in the hands of students, faculty, and others from universities and similar settings. These stakeholders are often outsiders to the communities where the action is being initiated. Such efforts in service learning are most commonly operationalized in actual practice.

Other initiatives in service learning involve the individuals from the disenfranchised community to initiate or take action for change in their existing relationships, individual and/or social expectations, and their everyday experiences. Any initiative that has a service learning component calls attention to the development of equitable collaborations between various participating individuals and trust building (Wade, 1997). In such situations, different stakeholders bring to the table a range of strengths, skills, and knowledge bases that emerge from their individual experiences, backgrounds, and contexts. For example, in collaborative partnerships between LIS students and community

members from marginalized groups, LIS students contribute their knowledge about information creation, organization, and dissemination as well as their skills in the use of ICTs. Whereas, community members from marginalized populations share the knowledge of their realities, needs, and perspectives in the collaborative venture.

These researcher-community member relationships need to develop an acceptance of equality of participation in the collaboration. This acceptance is based on recognition of the equality of each person's realities and contributions as related to the exchange. Such a rationale ties PAR to service learning efforts and helps address larger realities of sociopolitical, socioeconomic, and sociocultural inequalities. Empowerment will emerge from an acknowledgement (self and social) of the worth and contribution of every individual participating in the collaboration; larger inequalities will get addressed by providing users with the resources to resist their marginalized status.

CI provides service learning a strong framework for drawing upon the advantages of ICTs to further the local objectives and agendas in community development (Pitkin, 2001). A reference to informatics includes social and technological dimensions in their application within the context of community development. These range from e-mail and discussion forums to decentralized computing and community networking that support information provision and communication exchanges for fulfilling community needs (Lee, Vogel, & Limayem, 2002). Concepts and ideas in CI, such as focus on local efforts, action research, situated context of ICT application, participative inquiry, cultural diversity, and community asset mapping are significant to develop relevant theory and practice in service learning. For example, theory of organized activity—as applied in the context of CI—defines a community in terms of the common activity that people engage in. The theory analyzes communities as an information system developed around human activities that has various units, actions, bodies, persons, and organizational entities (Cordeiro & Filipe, 2002). These may be applied in different service learning projects to improve the flexibility and coordination of individual and group activities in the community system. An important part of service learning involves building relationships with community members to achieve goals that are meaningful to the community. In the context of the digital divide, figuring out what disenfranchised users consider significant in their everyday lives involves going beyond analysis of mere ICT access. It calls for incorporation of the “effective use” of application of ICTs, defined as the “capacity and opportunity to successfully integrate ICTs into the accomplishment of self or collaboratively identified goals” (Gurstein, 2003). CI provides a framework to represent effective use in digital divide research that can also find relevance in service learning via building knowledge of the who-what-where-why-when-how factors in information seeking of marginalized users.

Data Gathering Procedures

Survey of Faculty at a Major LIS School

This paper employs two data gathering procedures to record existing trends about service learning activities in LIS schools across the United States. First, a questionnaire was distributed to faculty at a major LIS program in the United States, eliciting their responses about service learning activities in LIS courses that they taught during the year 2002 (fall, spring, and two summer sessions). The questionnaire was distributed via a listserv created for faculty in the school and had e-mails posted by 66 people. A paper copy of the questionnaire was also distributed during a faculty meeting to those who wanted to respond via that medium. Responses were elucidated on topics such as: 1) kinds of service learning activities that faculty incorporated in courses they taught during the year 2002, 2) percentage (in terms of students overall grade) of service learning activities, 3) faculty reactions regarding how student participation in service learning activities contributed towards their LIS education, 4) challenges in incorporating service learning activities in LIS courses, 5) student's reactions about participating in service learning activities, and 6) other positive/negative experiences faculty wanted to share.

Collecting faculty responses about their service learning activities from only one LIS school was a limitation that will be addressed in future projects that collect responses from faculty at other LIS schools in the United States and abroad. The selected school where faculty responses were collected represents a major LIS school in the United States. The underlying assumption is that findings about service learning identified at this school reflect general trends in LIS education in the United States. However, greater research needs to be done to prove or refute this assumption. Additionally, the author believes that the study of service learning efforts at one school is important to identify worthy directions in service learning to pursue at other LIS schools.

Website Analysis of Top 10 LIS Schools

The second data gathering method involved a content analysis of the websites of the top 10 ranked LIS schools out of 48 master's degree programs in the United States that were accredited by the American Library Association (U.S. News & World Report, 2002).³ The procedures involved study of the main home page of the listed schools and analysis of the links from the map/index (if provided) on the different schools' websites. The aim of the content analysis of

the websites was to identify potential areas where service learning activities can be incorporated or strengthened in LIS programs.

The website analysis presents a limitation intrinsic to all such studies, namely, the resulting gap that emerges from how things actually are and what is projected about those aspects on the Internet (Menon, 2002). Substantiating service learning information found on the web with responses from faculty and administrative heads of different LIS schools about details of service learning in their master's programs is a strategy for future research that will help address this limitation.

In the website analysis findings are based on issues of appearance and coverage of service learning and its contexts and content, as reflected on the websites. The discussion presented in the paper however, goes beyond website design to address deeper issues associated with philosophy and purposes of LIS schools and their master's programs.⁴

The website analysis complements and substantiates the findings of the survey research eliciting faculty responses about service learning activities in LIS courses taught during the year 2002. Presenting these two projects in conjunction helps rectify the limitations that may occur within either individual study.

Findings

Survey Results

Nineteen faculty responded to the survey, 14 respondents returned the questionnaire via e-mail, and 5 returned paper copies. In response to the question about incorporation of service learning activities in the courses taught during the year 2002, 3 respondents replied that they had not taught during the time, 9 respondents replied with an affirmative response, and 7 respondents said none were incorporated. Out of these 7 respondents, one faculty member mentioned that even though she had not incorporated service learning in the courses taught, she was interested in doing so for future courses. Similarly, another faculty member who had not incorporated service learning wanted to do so in the future because she identified service learning definitional criteria of engaged citizens and "projects of relevance" as important in LIS education.

Faculty members who provided responses via the questionnaire taught courses on diverse topics during the year 2002.⁵ Based on specific questions that were asked, the following section briefly highlights responses of faculty members about service learning issues in LIS education.

Table 1 presents faculty-identified service learning activities in LIS courses taught during the year 2002. Responses of faculty members showed that

the percentage of the service learning activities (in terms of student's overall grade) varied depending upon the nature of the subject, though it generally ranged from 15% to full grade (for practicum students). In response to how student participation in service learning activities contributed towards their LIS education, one faculty member thought that participation in service learning activities helped students experience the connections among community, democracy, access, information, and research. Another faculty member stated that students learned specifics such as the context of the health information of particular marginalized populations. Based on teaching a course on network information systems during fall and spring semesters in 2002, one faculty member believed that students became "motivated to spend extra time learning the lessons in the course because of the real world, significant impact project" and had "an opportunity to work as a team to accomplish meaningful goals." All faculty respondents believed that since LIS is a service-oriented field, the various service learning opportunities allowed students to develop strong connections between research and practice in ways that were deeply rooted in community. As another respondent noted, "Because LIS is a service-oriented field, service learning opportunities enable students to develop a broader perspective on groups and settings that can benefit from the knowledge and skills they are learning in the classroom."

Table 2 presents faculty-identified challenges in incorporating service learning activities in LIS courses that they taught during the year 2002. Students' reactions were reported to be generally positive and enthusiastic, with a couple having negative reactions. The positive aspects were attributed to project practicality, working on something that was to be used in real situations, and the impromptu nature of projects. Respondent faculty reported that over the years, increased enrollment in classes that focused specifically on service learning activities was a good indication of students' positive reactions to these classes. One faculty member stated that new students often took service learning classes because former students in those classes encouraged them to take the opportunity to be involved in service learning and community work. Sometimes, students continued to volunteer in service learning projects that they participated in within their classes after the semester ended. Faculty members reported negative reactions of a few students including student concerns about participation evaluation (course grading) and lack of interest in service activities. The following comment made by one faculty respondent summarizes the range of student reactions to their participation in service learning activities: "Excitement, frustration, disappointment, deep interest and engagement, exhilaration when things went well, anxiety and lack of confidence—will I fit in? Don't want to seem like a 'know-it-all'."

Table 1: Faculty-Identified Service Learning Activities in LIS Courses	
<i>Topic Of Course</i>	<i>Service Learning Activity</i>
Reference: Medical literature Social justice in LIS	Designing web-based pathfinders for a women's resource center and creating health plan templates for a workshop organized by a local minority women's network.
Network Information Systems	Developing community technology centers in disadvantaged areas.
Information literacy	Doing research and building relevant online resources for the disabled, minority student coalitions, public libraries, local community technology centers, low-income adults and youth organizations.
Pragmatic technologies	IT-related work in K-12 classroom situations.
Web design for organizations	Web page design for social justice agencies.
Library networks	Grant proposal writing that incorporated service type projects.
Systems analysis and management	System design of herbarium information systems of biodiversity survey data display.
Literature and resources for children	Literacy program and multicultural materials evaluation; creating websites, bibliographies, and program development for youth activities.
Reference and information services	Student reference in public libraries to provide Internet-based service to patrons in remote areas.
Social justice in LIS	Conducting action research with a local minority women's network to set up a health workshop, developing teen programming for a local library, establishing computer mentoring at an after-school club, web development for social justice and minority agencies, and organizing local deliberate forums.
Practicum	Students established wireless Internet connections at community technology centers, built online content and developed a health workshop for a local women's network, and conducted service learning research in K-12 settings.

Table 2: Faculty-Identified Challenges in Incorporating Service Learning Activities in LIS Courses	
1.	Making the project and its phases fit into a timeline that met the schedules, needs, and expectations of both students and clients.
2.	Not being able to incorporate feedback from clients and expert reviewers into course time frame.
3.	More effort and time needs to be devoted by the instructors in project planning and implementation (e.g., plan for logistics like travel to work sites).
4.	Lack of appreciation of non-technical community service by students.
5.	Inability to identify projects and gain entrée into social justice settings and activities.
6.	Students' lack of experience with community action.
7.	Students' disappointment with the lack of community participation.
8.	Developing flexibility to change structures of courses and the topics covered in various lectures and labs to better prepare students for community work.
9.	Coordination and organization of affective team work to achieve desired goals.
10.	Training students to produce usable project outputs and the lack of community resources to implement suggested changes.
11.	Accounting for unforeseen situational circumstances that develop while encountering real world conditions of interaction with the community and the public.
12.	Maintenance of service learning initiatives was difficult unless the class continued the same project each semester.

Table 3: Website Analysis of the Top 10 Ranked LIS Schools		
<i>Website Component Study</i>	<i>Findings</i>	<i>Example Of Links</i>
Main home page	<p>More than three links that contained permanent, substantial and different service learning related information that students could participate in while taking LIS courses (2 schools).</p> <p>2-3 links with permanent minimal service learning-related information (1 school).</p> <p>1 link with permanent service learning-related information (1 school).</p> <p>0 links with any permanent service learning information (7 schools).</p> <p>Space for changing information that sometimes contained service learning-related information (10 schools).</p>	<p>Outreach, Public service, Commitment to diversity, Community technology, Diversity info</p> <p>Minimal service learning briefly represented under link with broader info on Access—People and Collections</p> <p>News and events, Spotlight</p>
Site map/Index	All schools have service learning-related content and connections to service learning activities in various courses.	Service learning activities “hidden” within syllabus of courses offered
About page	References to diversity and/or community networking in their mission statements (4 schools).	Welcome, Mission, Vision statement
Areas of concentration in MLS programs	MLS programs had a concentration that solely focused on community/informatics or cultural diversity issues—areas that have strong potential for service learning activities (None of the schools).	
Community resources	Information about local community organizations and under-represented populations (3 schools).	Database of local grass-root organizations and networks of disadvantaged users
Search function	Website of 8 schools had a “search” function. None of them retrieved relevant information when the keyword “service learning” was entered.	“Search” function retrieved results that had the words “service” or “learning” (but not both)
Other	Incomplete or missing information on service learning components that needs to be updated at regular intervals. (All schools).	Research, List of Projects

Results from the faculty survey presents the types of service learning activities incorporated during the year 2002 and faculty responses to various pros and cons associated with service learning in LIS education. Findings will be discussed in greater detail in a subsequent section.

Website Analysis

Table 3 highlights findings from the content analysis of websites of the top 10 ranked library schools in the United States. Findings are based on the analysis of the main home page as well as specific components located on the websites of the selected ranked schools.

Findings from the website study of the top 10 schools in the United States reveal the need for improvements in various different areas where service learning activities and information can be incorporated or strengthened. Such areas include philosophy of the programs, content materials on the program's websites, and the design and organization of the websites. These areas will be discussed in greater detail in the next section.

Discussion and Reflection

Results from the faculty survey show that individual respondents are making significant efforts to incorporate service learning activities in their courses. Faculty responses regarding their students' experiences reveal that despite challenges to incorporate service learning in LIS courses, the areas of application and the benefits of service learning in LIS education are tremendous. Several respondents note that service learning efforts help strengthen the connections between theory, research, and practice. They believe that service learning provides students with opportunities to relate these three elements in a manner that is deeply rooted in the community. Also, faculty members' responses show that they consider service learning to yield progressive social equity initiatives and provide concrete learning outcomes for both the community and the students.

Analysis of faculty responses reveals a subtle distinction between the two kinds of service learning efforts: 1) Service learning activities where students and faculty play a leading active role in bringing about change in information systems and services, and 2) Service learning initiatives where students and faculty play a passive role and the marginalized community members play a leading active role to initiate change to better their experiences. Faculty responses show that there is a greater tendency in the service learning efforts adopted towards students taking the lead to bring change as compared to a PAR model where community

individuals initiate change. There are degrees of variation in the adoption of PAR strategies in LIS courses that were taught where the community members took the lead to change their experienced situations. Yet, several faculty members mention the need for greater efforts towards this end. Future efforts to involve the participation of marginalized groups must consider building skills, developing appropriate knowledge bases, and actively letting such communities become part of the information system design process. Some faculty members specifically spoke about the need for conscious attempts to adopt PAR features in service learning in LIS courses to move forward toward more equitable and empowering library and information systems environments.

Findings from the website analysis reveal the need for improvements in different areas where potential service learning activities can be incorporated or strengthened. These include philosophy of the programs, content materials on the program's websites, actual design and organization on the websites, and issues related to website presentation and aesthetics. An important suggestion from the analysis of the main home pages of the schools is that LIS departments need to market themselves (via their main homepages and through other mechanisms) with more relevant service learning information. This will sustain credibility that LIS education does initiate and connect research and practice to community needs and supports democratic ideals and social equity for marginalized users.

Based on content analysis of links from the site map/index provided on the websites of many of the schools analyzed, findings reveal that the schools need to make the service learning content provided on their websites more visible. There is a need for greater organization and clearer classification of their service learning materials that are currently scattered throughout website layouts. The aim should be to bring the service learning materials together under a cohesive and specific agenda. For example, it was not possible to identify service learning activities that were within syllabi of courses offered without having to navigate through each and every course listed.

Analysis of the "About" web pages on the LIS school websites shows that there is a potential for strengthening a service learning agenda with a focus on work with marginalized populations. None of the master's programs had a concentration that solely focused on community informatics, an area that has potential to address cultural diversity issues and service learning in LIS education. This finding suggests that LIS schools should expand their existing areas of concentration to include CI as a viable area of study. This will help LIS education present itself as an active agent in civic engagement and social equity for disenfranchised populations.

Specific links on the websites studied—such as those associated with research undertaken at the school, faculty involvement in different projects, and available community resources—show the need to provide complete information

about these topics as related to service learning. Also, in terms of the information presented on these web pages, there is a need for more accurate and comprehensive representation of specific service learning activities that are taking place in the various courses offered in the school.

Summarizing the main findings from the website content analysis, there are several service learning activities incorporated into the education programs at the top 10 ranked LIS schools across the country; however, information related to those activities is generally scattered and there is a need to consolidate that information at one particular location within the school websites.

Recommendations: Future Directions for Growth

The faculty survey demonstrates that at an individual level faculty from one school are making commendable efforts in integrating service learning as a part of LIS education. The website analysis of the top 10 LIS schools identifies a general need for making service learning values, activities, and practices more visible and marketing them under a cohesive and systematic agenda. Introduction of CI, with a focus on service learning, as a viable area of specialization in master's programs, is one direction to pursue towards this goal.

There are many possible reasons why there is a variation in findings from the two studies. A possible reason for documentation at an individual level of positive faculty service learning efforts in one program, while at the same time, a general lack of similar representation and excitement about service learning initiatives at the national level, may be owing to the uniqueness of findings from faculty responses at the particular LIS school. Other possible factors for inadequate attention to service learning at the national level could be: 1) incomplete or outdated information presented on the websites, 2) political factors at the school level and in university administration that prevented identification of service as a strong direction to pursue, 3) the nature of website analysis that did not identify a cohesive agenda, and/or 4) the impossibility of presenting service learning activities on websites.

A finding from the results of the faculty survey shows how the service learning criteria of inclusiveness of marginalized populations was far more pervasively adopted as compared to PAR models. In order to play a significant role in enactment of democracy—as well as to make libraries places where disadvantaged users feel comfortable to go to meet their information needs—LIS schools need to train future students to engage in PAR related work in their community networking and service learning initiatives. The website analysis identifies a need for LIS schools to distinctly identify, prioritize, and market CI as a viable specialization area in their missions and master's programs. This will

strengthen community development via support of service learning initiatives that are already being practiced by faculty across diverse subject areas in LIS education.

Given the set of findings from both the studies, the author calls for action in LIS education to adopt PAR models in service learning and establish a CI track within the discipline. LIS education with a bent towards PAR in service learning entails student involvement in projects where the inclusion of marginalized populations is maintained throughout all stages of project development and implementation (including formulation of project goals, implementation strategies, phases of work, and outcome evaluations). This includes project areas like design and evaluation of library and information resources, which are domains that have been traditionally dominated by librarians, information specialists, and experts from other disciplines. Furthermore, PAR would require recognition of disenfranchised users as experts and require teaching students how to give up control and power in establishing information systems.

Another direction to pursue in terms of support for PAR in LIS education is to recognize and provide resources for disenfranchised individuals to create sources of information. Such information can include knowledge of marginalized experiences and realities. Providing ways for such individuals to share their own experiences—via real-time and online avenues—to improve the design of information systems and services is a worthy direction to pursue.

In the context of building a CI track in LIS master's programs, an important step will require efforts to recognize and map various service learning activities and endeavors being pursued across different settings in the community. These include departments and programs at the university and beyond, with a goal of identifying potential networking collaborations that can be developed in future efforts. A simultaneous step will be to re-examine the mission of LIS education in terms of identifying the potentiality for building collaborative networks and service learning ventures between faculty, students, community members, and projects across the board. This is related to an agenda of bringing various stakeholders in the community to the table to identify community problems on particular issues. Such efforts should include the development of connections with local community organizations, social justice agencies, and other public, private, and non-governmental agencies. Identifying the contexts for building such collaborations across the community where students can become engaged in service learning projects should be one outcome of the initiative. In addition to teaching and developing service learning projects, LIS educators can play two kinds of roles in CI. First, it is important for LIS educators to take an active stance towards building connections and spearheading service learning projects across the community where social justice is an integral expected outcome. Secondly, LIS educators should document the processes and dynamics that maintain such

initiatives in order to identify relevant theories, frameworks, and methodologies that develop as paradigms within the CI track.

The following are additional aspects in service learning efforts that LIS educators need to consider in order to develop a CI track in LIS education:

- Support local efforts in the community to address issues of diversity;
- Address issues of computer literacy and training of disenfranchised individuals;
- Provide greater access to computers for marginalized individuals and support computer use in ways that is meaningful to people's everyday lives;
- Build culturally relevant content online for minority communities;
- Include participation of people from marginalized populations in policy development surrounding technology use;
- Create awareness among youth about community problems;
- Promote activism against stereotypes perpetuated by media and advertising;
- Fight against unsavory conditions of work for people of color and immigrant women in local work establishments; and,
- Engage community members in design and evaluation of library resources, collections, and services.

In conclusion, findings from the two studies in this paper complement each other. The faculty survey specifically identifies existing service learning efforts and issues in a major LIS school in the United States. The website analysis extends and substantiates information that the area of service learning needs to be explored in a broader domain within the profession. The latter study draws attention to the need for LIS education to make a more aggressive, clear, and visible proclamation in terms of its service learning agenda in future initiatives. Developing a CI track in LIS education across different programs of study is one step in this direction. Such efforts will help develop committed relationships between marginalized communities and LIS educators. Such a commitment will help sustain the role of LIS education and the profession at large as active agents of social justice, progressive thinking, and civic engagement.

Notes

¹Marginality may occur via race, ethnicity, class, gender, sexual orientation, disability, education, income, geography, skills, religion, nationality, and other factors associated with the digital divide.

² This study analyzes data collected as a part of the Current Population Survey which pools data from over 50,000 households

³The ratings of the top 10 LIS schools were based solely on a 1998 survey that compiled faculty and academic administrators' beliefs regarding programs' reputations.

⁴In this context, if there is a discrepancy between service learning content on the schools' websites and actual strategies practiced at the LIS schools, then the concerned LIS schools should consider making immediate efforts towards bridging these gaps. This is particularly important in the context of the pervasive use of the Internet, its application in projecting a certain image of various LIS schools across the world, and the reliance of students (as well as others) on the schools' websites for seeking relevant and accurate information to make decisions regarding application, courses and research areas to teach and study, and numerous other choices. Efforts to present accurate information, develop clarity between the service learning philosophy, reveal purpose and content of the LIS schools' programs on their web pages, and prioritize marketing of the LIS schools' service learning efforts via the web, will further the teaching, research, and service missions of LIS schools.

⁵These included courses on: medical literature and reference work, network information systems, information literacy, pragmatic technologies, distributed knowledge, web design and construction for organizations, library cooperation and networks, systems analysis and management, literature and resources for children, story telling, reference and information services, and social justice in the information professions. Also, two faculty respondents had practicum students who worked on service learning projects.

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