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National Survey Documents Effects of Internet Use on Libraries

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Eighty percent of the students and faculty members who responded to a recent national survey stated that the Internet has changed the way in which they use campus libraries. More than one-third of the respondents overall and half of those in fields such as business and engineering now use the library less than they did just two years ago.

These are among the preliminary findings of the survey of more than 3,200 students and faculty members at universities and liberal arts colleges conducted by the Digital Library Federation (DLF) and the research firm Outsell, Inc. The main purpose of the inquiry was to learn how the Internet is affecting the work of students and scholars and what consequences Internet use will have on campus libraries. CLIR will publish full results of the study, entitled *Dimensions and Use of the Scholarly Information Environment,* this summer.

A preliminary analysis of findings indicates that respondents' patterns of information use and their perceptions of libraries are not monolithic. Information needs vary depending on whether a user is a researcher, teacher, or student; they also vary on the basis of general academic field. Faculty and students in business and law view and use information differently than do those in the arts and humanities; the needs of engineers and physical scientists differ from those of both these groups. Patterns of use and perceptions also vary by type of institution: faculty and students at liberal arts colleges perceive of and use information differently than do their counterparts at universities.

Where Scholarly Work Is Done

The survey data provide insight into the workplaces of faculty and students: where they are (office, home, library), how they are equipped (network connections and hardware), and what portion of respondents' working time is spent where. Of the time that graduate and undergraduate students

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devote to looking for information used in research and course work, one-third is spent in campus libraries. When searching for and using information for research and teaching, faculty members, by contrast, spend only about 10 percent of their time in the library. Three-quarters of the time that professors, particularly those at universities, put into seeking information for teaching and research is spent in their offices. Of the time that undergraduates devote to finding and using information for course work, about half is spent in their residences.

The data raise significant questions about how universities and colleges should allocate equipment and space both in the library and elsewhere on campus. For example, students and scholars alike rarely use network connections in computer labs, science labs, and classrooms for research, teaching, or learning. Does that argue for fewer connections in these locations? Are faculty members and students working so much outside the library because the information they need is readily available to them remotely? Or are they adjusting their information needs to suit their preferences for working environments?

It seems clear that libraries must be able to deliver effective services online, reaching faculty in their offices and everyone in their residences.

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Information-Seeking Behavior

Much of the survey data deal with how respondents locate and obtain (or acquire access to) different kinds of information, such as books, print journals, e-journals, abstracts, and indexes. Search strategies differ depending on whether one is looking for resources for research, teaching, or learning. When searching for a hard-copy book as part of a research project, for example, 83 percent of faculty members and graduate students go online. Nearly half (47 percent) use printed sources (respondents could give more than one answer). Only 23 percent seek personal assistance to locate the book. The pattern for undergraduates looking for books or other materials used in a course is considerably different: fewer (72 percent) go online, and more (35 percent) seek personal assistance. Twenty-nine percent use printed sources to locate the material.

Information-seeking behavior also differs by kind of institution. For researchers at liberal arts colleges, online resource discovery is more important than it is for researchers at public and private universities, at least when searching for hard-copy books. This may reflect the fact that many college libraries' collections are oriented toward teaching. Researchers at these institutions are dependent on outside libraries' collections, which are most easily searched online. Personal assistance, conversely, is

more important to researchers at private universities than it is to those at liberal arts colleges. This may demonstrate that research-collection strengths at private universities are matched by the level of reference services they offer.

The information-seeking behavior of students is the opposite of that for researchers. Personal assistance in locating hard-copy books is more important for students at liberal arts colleges than it is for their counterparts at universities.

Provision of Course Materials

The survey questionnaire requested information about how teachers distribute and students access readings and other materials for courses. A preliminary analysis indicates that teachers overwhelmingly prefer to distribute materials physically rather than online. Three-quarters of all teachers make course materials such as syllabi available to students through handouts; half also use course Web pages. When all electronic formats (e-mail, course Web pages, e-reserves) are considered together, nearly two-thirds of all teachers said they make at least some course materials available online. Fully 100 percent, however, provide such materials in physical form.

Some variation exists depending on type of institution and academic discipline. Teachers at liberal arts colleges prefer physical handouts more than their counterparts at universities do. Nearly four-fifths of physical scientists and engineers, compared with less than half of arts and humanities teachers, use the network as a means of distributing course materials. Libraries play only a small role in distributing the administrative information associated with courses.

For course readings, the picture is different. College teachers use more means than do their university counterparts to make readings and other learning materials available. They also place much greater emphasis on the library as a source for these materials. Variation is also apparent, though less

pronounced, by discipline: in this area, the kind of higher-education institution makes a greater difference than does subject.

Trust of Internet Resources

The survey provides evidence that for online resources, faculty and students give high priority to speed and ease of access, information quality, and search functionality. They assign low priority to display options and user-support services. Library-supplied information is universally trusted and used. With Internet resources, three-quarters of the respondents agreed with the following statements: "The Internet contains information that I use and cite," "The Internet contains high-quality information," and "The Internet contains information from credible sources." Only about half, by contrast, agreed with the assertion that "The Internet contains information that I use and trust." Undergraduates and users at liberal arts colleges generally put greater faith in and make greater use of Internet resources than do persons who use university libraries. Arts and humanities users and social scientists trust Internet resources less than do their counterparts in other disciplines.

The preliminary data reveal that faculty and students are comfortable with both print and electronic information, with little or no variation by discipline, institution type, or kind of user. Most students and faculty feel that printed books and journals will continue to be important to them in five years. At the same time, they agreed that the amount of academically relevant Internet information is growing and that this may further reduce their use of physical libraries.

For more information about the study and its results, see http://www.diglib.org/use.htm.

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