

SEPARATING WHEAT FROM CHAFF: HELPING FIRST-YEAR STUDENTS BECOME INFORMATION SAVVY

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Introduction

When students know how to independently find and use information, they are prepared for a lifetime of learning. . . . [T]he ability to find information is no less important than the information itself.

—Ernest and Paul Boyer, *Peterson's Smart Parents Guide to College*, p. 134

Many traditional first-year students arrive on college and university campuses with a great deal of experience in searching the Internet. In fact, they can find prodigious amounts of information with relative ease—as evidenced by the lists of Web sites used to document many of their research papers. Most of these students, however, lack the critical-thinking skills and database-searching proficiency necessary for them to fine-tune their information searches. They need to know how to focus their topics, where (in addition to the Internet) to search, and how to evaluate and use the information they retrieve—skills commonly encompassed in the phrase “information literacy” (Commission on Higher Education of the Middle States Association of Colleges and Schools [CHE], 1996, p. 15). As Ernest and Paul Boyer (1996) have observed, college students need help “becom[ing] savvy consumers of information” (p. 126). The Boyers believe that, in partnership with faculty, librarians have the expertise to instruct students in information retrieval and evaluation (pp. 130–131).

Institutions of higher learning strive to graduate students who are intellectually prepared to be lifelong learners. Disciplinary knowledge can change at a rapid pace, rendering some subject

content obsolete within a relatively short period of time. Graduates who are information literate are equipped to remain current through continued researching in their fields of interest, they are prepared to be valued employees in their chosen professions, and they are more effective members of society because they can readily locate and assess information both for personal use and for public service.

Three concepts occur frequently throughout this article: information literacy, critical thinking, and database-searching proficiency. The context of our use of these concepts must be defined. The American Association of College and Research Libraries (2000) provides a list of competencies that apply to an information literate person. Such a person is able to

- determine the extent of information needed;
- access the needed information effectively and efficiently;
- evaluate information and its sources critically;
- incorporate selected information into one's knowledge base;
- use information effectively to accomplish a specific purpose;
- understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally. (p. 3)

Critical thinking goes hand in glove with information literacy. Gibson (1995) observes:

A researcher must begin by posing a good research question and must use critical thinking skills to know what is a good question. . . . He or she must plan a flexible strategy or set of strategies that uses a variety of tools to locate information; the searcher must bring some disciplined thought to bear on developing the strategies and must make informed choices about tools and sources to use. (p. 32)

Gibson ties critical thinking directly to database-searching proficiency, noting that search results “must be screened with an eye for relevance, authoritativeness, and appropriateness. . . . Further evaluation of the information must follow in greater depth, using criteria and good judgment.” In the best-case scenario, Gibson suggests, “the searcher will conclude with self-questioning about better ways of conducting the research next time, with development of appropriate standards for making better choices throughout the entire process” (p. 32). The higher-order thinking skills that Gibson describes in his best-case scenario are not easily achieved at the freshman level. Nevertheless, we believe that the first step toward reaching such a state of self-reflection can occur in a first-year class.

Models of Instruction for Information Literacy

There are a number of models for the delivery of information literacy instruction to first-year students. (For the purposes of this article, the phrase “library instruction” will be used to denote the teaching of information literacy competencies.) The model used depends upon a number of factors, most notably the amount of time that the teaching faculty member is able to devote to library instruction. Other factors include the nature of the research assignment for the course, the availability of a computer classroom, and the amount of time the librarians are free to teach.

We here describe the models most frequently encountered at the freshman level. A variety of additional models for information literacy instruction in general education programs can be found in Breivik (1998, pp. 44–52).

Course-Related Instruction

Course-related instruction is the most popular, though not necessarily the most effective, form of library instruction. Typically, a librarian spends one class session, often in an English composition or a study skills class, teaching students how to use the online

catalog and electronic periodical databases necessary to complete a class assignment—tools they also can use when conducting research for other courses. One class session is rarely sufficient to address the broad range of critical-thinking skills students need to become effective researchers.

Web-Based Instruction

Self-paced, interactive, computer-based tutorials are sometimes used to deliver information literacy instruction. Although occasionally completed during class time in lieu of live instruction, computer-based tutorial modules are more often completed on the students' own time. Vander Meer and Rike (1996) describe a successful Hypercard instruction program used for the library portion of University 101 courses at Western Michigan University. Kaplowitz and Contini (1998) report on the use of a computer-assisted instruction (CAI) module for students in a course preparatory to the biology major. Computer-based tutorials are increasingly migrating to the World Wide Web.

When tutorials are a meaningful component of a course or program, they have a potential advantage over single, course-related sessions. They can be written so that critical thinking and evaluation competencies are modeled and practiced during the span of the instruction. There are drawbacks to this method, however. Completion of tutorials may or may not be required for a particular class (or for graduation) and they tend to be generic, rather than targeted to specific course content.

Models Connected with General Education Programs

Library instruction is fast becoming a component of general education programs nationwide. Teaching faculty and administrators recognize the importance that information literacy skills play in students' success—not only while they are on campus, but also when they have left academia. The pace of change in the tools used for information searching underscores the need for students

to learn which concepts and techniques will be effective, regardless of the latest software or system permutations.

Moreover, accrediting agencies are looking for evidence that information literacy is being addressed by undergraduate institutions. The CHE (1994) states: "Each institution should foster optimal use of its learning resources through strategies designed to help students develop information literacy" (p. 15). In addition, accrediting agencies encourage involvement of personnel beyond the library. The CHE notes that information literacy programs should be not only "active and continuing," but also "developed collaboratively and supported actively by faculty, librarians, academic deans, and other information providers" (p. 15).

Institutions that have incorporated library instruction into their general education programs have done it in a variety of ways. Some make it a component of first-year experience programs while others simply specify that it be part of the lower-division general education curriculum.

General Education Credit Courses

Librarians at some colleges and universities teach credit courses (usually 1 credit) that may or may not be required for graduation. For example, Eastern Washington University offers a course entitled Computer Literacy II (Fenske, 1998). Objectives for the library section of the course indicate that students will be able to differentiate between library databases, access the library system using a Telnet connection, search the online catalog, interpret bibliographic records and citations, choose and use an appropriate database for a topic, and locate other sources of information (p. 68). Pre- and post-tests were given to students to determine their grasp of the library-related material in the course. Fenske found that 82% of the students did better on the post-test than on the test given before the library lecture, and that the mean difference in the scores was statistically significant (1998, p. 70).

Students benefit from the depth and breadth of instruction that can be presented over a number of classes in such courses. When librarians teach students for a whole semester, they can delve more fully into the key components of doing research. Students are ac-

tually able to go through the steps that are required for a successful research experience, and the librarian can incorporate critical-thinking and evaluation skills throughout the course. The librarian has an opportunity to assess student learning in a sustained manner based upon a number of class projects or assignments—an option not available with other models of library instruction. An additional benefit is that students often treat this instruction more seriously because, in this model, the librarian holds the power of the grade. There is one potential drawback: if students do not immediately apply their information literacy skills to a content-based course assignment, they tend not to recognize the relevance of such skills to other courses. Although credit courses offer a number of advantages for student learning, some institutions have resisted adding them to an already-full general education curriculum. Librarians are sometimes resistant, too, because these courses can place a strain on library resources and staff. Consequently, only a small percentage of college and university libraries currently offer credit courses.

Library Instruction in First-Year Experience or First-Year Seminar Classes

First-year experience programs or seminar classes are generally designed to improve the quality and cohesiveness of students' initial year on campus. Because information literacy is key to a successful college experience, library instruction programs often work hand-in-hand with first-year programs or seminars. Librarians can target their instruction to first-year students specifically, incorporating proven active-learning techniques as these programs are developed. Librarians and course instructors can purposely plan to address critical-thinking competencies throughout the program or class.

Dabbour (1997) describes a program at California State University–San Bernardino that ties library instruction to a freshman seminar experience course. The goal of the instruction session is for students to “accept, prefer, and be committed to the value of using library resources for academic inquiry” (p. 302). Compo-

nents include one 90-minute class with a librarian that incorporates active-learning methods and a brief homework assignment and concludes with a follow-up lecture covering “the differences between scholarly and popular periodicals, . . . examples of other subject indexes, and . . . Boolean logic” (p. 304). Student assessment of the value of the library instruction was highly favorable (pp. 304–305).

Library instruction at California State University–San Marcos, in contrast, is not limited to a single class period within a first-year skills or computer literacy course. Sonntag and Ohr (1996) describe how librarians work closely with administrators and faculty to ensure that information literacy is incorporated into the five different areas of the lower-division General Education Program: basic skills (Area A), math and science (Area B), humanities and arts (Area C), social sciences (Area D), and lifelong understanding (Area E) (pp. 334–335). They describe the program further: “In the Area A courses, students learn how to use a library . . . and the courses include aspects of evaluation of sources, critical thinking, and critical listening. The course meeting the requirements for Area E focuses on understanding the electronic library and targets student use of technology while introducing students to issues on the Information Age” (p. 335). Librarians teach students how to use discipline-based resources in courses in Areas B, C, and D. Librarians, working with the Faculty Center, develop faculty workshops that “focus on aspects such as the effective integration of information literacy in the classroom and active learning assignments that emphasize problem-solving and inquiry” (pp. 336–337).

Programs at the University at Albany and Messiah College

We have described several existing models for first-year library instruction, including the integration of such instruction into general education courses. Our own institutions have chosen that route: a first-year living/learning seminar (University at Albany) and a first-year seminar (Messiah College). The faculty and librarians at both institutions believe not only that the timing of the instruction is crucial, but also that the best learning experiences occur

within the context of a content-based class and at the point of need that a class assignment provides.

The University at Albany is a Carnegie Research II University with an enrollment of approximately 14,000 undergraduate and 5,000 graduate students. Messiah College is a college of the liberal and applied arts and sciences with an enrollment of 2,700 traditional, largely residential, students. Descriptions of the first-year programs for both institutions follow.

Project Renaissance at the University at Albany

Four years ago, the University at Albany instituted a new first-year experience program entitled Project Renaissance. The year-long living/learning experience emphasizes inquiry, community service work, and the development of technological and writing skills. Project Renaissance has enrolled as few as 200 and as many as 600 students per year, but now aims for an average enrollment of 400. Students are selected based on their expressed interest, but efforts are made to have the participants resemble a microcosm of the freshman class. Students take 6 credits in common each semester, spending half of their time in large group lectures and the other half in small-group discussion sessions. Teaching focuses on themes of human identity and technology, although there are a number of specialized class sections connected to pre-professional programs such as health, business, and law. The curriculum fulfills 4 courses within the general education requirements, as well as the lower-division writing-intensive course requirement.

The coordinator of User Education Programs for the university has been involved in planning Project Renaissance from its inception, and has been designated Project Librarian. Library instruction has always been considered a desirable component of the program, although its nature has changed from year to year. Before Project Renaissance, students at Albany received library instruction on a hit-or-miss basis, depending on whether one of their professors decided to include it within a course, or on students' own initiative to sign up for library workshops. Some stu-

dents received no library instruction until their senior year, and asked why they had not had the opportunity to learn information competencies earlier.

Program Changes

Discussion among program instructors and the Project Librarian during summer planning sessions has led to adjustments designed to make the instruction more effective. Librarians offer to teach at least 2 sessions for all Project Renaissance sections each year, with additional sessions optional. The bulk of instruction occurs in the fall, but it can be given in the spring if that better fits the class structure. In fact, because Project Renaissance students have the same instructors throughout the year, library instruction can occur when it can be most strategically applied to course assignments.

Some of the specific changes made over the years include the following: tying class assignments more closely to the content and timing of the library class; moving an early class on the library catalog and databases to later in the year (when students are more likely to use what they learn in this session); and placing more emphasis on the evaluation of information sources.

Program Constants

Despite the program's changing nature, there have been a few constants. The Project Librarian attends annual summer planning sessions to meet new instructors and teaching assistants. She gives a presentation on the benefits of library instruction and introduces the standard modules to be used in the coming year. The Project Librarian also works with instruction teams as they develop their course syllabi, helping to determine the most effective timing for library instruction and to develop assignments that reinforce information literacy skills.

The Project Renaissance program introduces students to a wide variety of educational technology. Consequently, most library instruction classes are taught in a computer classroom, since students expect (and should have) hands-on instruction for electronic tools. Only concept-based classes, such as "The Nature and Use

of Information” (description below), are taught to large sections in lecture halls.

Library Instruction

Over the years, librarians typically have offered sessions such as those listed below:

- **Access Points for Information:** Students learn to match the type of information needed with the appropriate source format, e.g., newspapers, the Web, or scholarly books. Students also learn how to structure a good search strategy and how to search the online library catalog and electronic databases.
- **The Nature and Use of Information:** In this theoretical class, students explore the differences between data, information, and knowledge; strategies for finding information; primary and secondary sources; scholarly and popular materials; and selecting a research topic.
- **Evaluating Information:** This session shows students how to evaluate the information they find when doing research, particularly information on the Internet.

In the “Evaluating Information” session, students are asked to evaluate three Web sites and one printed source on a current, hot topic, such as cloning or the effects of smoking. Students work in small groups to answer a series of questions:

- How comprehensive is the information?
- How current is the information?
- Would a book or encyclopedia provide better information?
- Who is the author?
- What are the author’s credentials for writing the material?
- Are sources cited?
- What is the purpose of the site?
- Are the links appropriate, i.e., do they lead to related sites that are at the same intellectual level?
- Is there evidence of bias in the material presented?

Each of the “Evaluating Information” sessions is adapted to the content of a particular class. In a class studying famous American trials, students targeted Web sites on Julius and Ethel Rosenberg. Students explored three Web sites: one site emotionally supporting the Rosenbergs; a second, factual, site written by a law school faculty member; and a third site that eventually revealed itself to be the creation of a team of high school students.

In order to assess student learning, the librarian asks each small group to report on their findings after evaluating both the Web and print sources. This helps the librarian identify misconceptions and inaccuracies for on-the-spot correction and may suggest possible areas of review for future classes.

Librarians have also developed entirely new classes based upon the needs of particular instructors and class assignments. One instructor asked a librarian to emphasize critical thinking when teaching students in his human diversity class how to find multicultural resources on the Web. Another asked the University archivist to provide an overview of the institution’s Special Collections and Archives as well as an introduction to historical resources.

Albany’s program was at peak enrollment (600) during 1998–1999, and librarians were being stretched thin to provide the 2 standard classes for each section, as well as occasional specialized sessions. To address this problem, the Project Librarian and a colleague wrote and mounted a tutorial covering the same material as the librarian-taught “Access Points for Information” class. Half the students in the generic Project Renaissance classes used the Web-based tutorial while the other half were instructed by a librarian.

University at Albany Assessment

In conjunction with developing the Web-based instructional module just mentioned, librarians at the University at Albany crafted pre- and post-tests to compare the effectiveness of the tutorial with in-person instruction. The data gathered also allowed those involved to gauge the effectiveness of library instruction upon student knowledge of research tools and resources. Analysis of the mean number of correct responses (see Table 1) on the pre-

and post-tests yielded a statistically significant difference ($p < .05$, using ANOVA). Further statistical analysis indicated that Web-based instruction was as effective as in-person instruction ($p = .053$, using t tests on contrasts), based on the mean number of correct answers for each instructional method (Germain, Jacobson, & Kaczor, 2000).

Table 1. Mean Number of Correct Answers by Instructional Format

Test	<i>N</i>	Mean # of Correct Answers	<i>SD</i>
Pre-test, web	160	7.9125	1.7023
Pre-test, live	143	7.7203	1.7539
Post-test, web	157	9.0701	1.6057
Post-test, live	127	8.6693	1.8816
Total	587		

Note. From "A Comparison of the Effectiveness of Presentation Formats for Instruction: Teaching First-year Students," by C. A. Germain, T. E. Jacobson, and S. Kaczor, 2000, *College & Research Libraries*, 61, p. 69. Copyright 1999 by the American Library Association. Reprinted with permission of the authors and the American Library Association.

Other assessment of the instructional program has been more anecdotal. Librarians at Albany have received positive feedback when they have queried Project Renaissance instructors as a means of judging the quality and usefulness of the library instruction sessions. One Project Renaissance instructor reported,

The two sessions my students attended were extremely useful in terms of teaching them to critique [I]nternet resources for research purposes. . . . The sessions were especially helpful as they combined active learning with hands-on activities which fostered critical examinations of information. Additionally, given the size of our university, students often feel intimidated to use any of the library's resources, and confine their own research to limited, and often unexamined, searches on the [I]nternet, from their rooms.

A second instructor commented,

In my four years as a faculty member in Project Renaissance, I can say that I've always taken advantage of all classes offered by the library staff. The classes are thoughtfully conceived, in terms of theory behind the practice. But they also have been constructed to offer students a step-by-step practical guide to using the resources, especially in "Evaluating Information." One thing that I liked about this class in particular was that it was thematically tailored to the subject matter of my course.

During the summer planning conferences (described earlier), experienced instructors relate to new instructors the benefits of library instruction to Project Renaissance students:

- Students are more likely to use the library.
- Student research sources are more on-target.
- Students are more selective in the Web sites that they use.

Librarians do not have direct feedback from students, although sometimes Project Renaissance instructors will pass along comments they have received from their students. Librarians have asked whether some of the assessment instruments used with Project Renaissance students could incorporate an information literacy competencies section, but that has not yet occurred.

Problems with Library Integration into Project Renaissance

Librarians teaching Project Renaissance students have two primary concerns they would like to see addressed. First, unlike the librarians in Messiah's program (described later in this article), Project Renaissance librarians are not consistently consulted on library-related assignments. Often, it is only after assignments are developed that librarians are informed. Clearly, librarian input—on available and appropriate resources and their virtual or actual locations—earlier in the process would increase the effectiveness of assignments. The second concern involves program instruc-

tors who opt out of library instruction. Time constraints may be a hindrance, or instructors may presume that information resources are included with other technology skills that their students are being taught.

Overview of Messiah College Program

First Year Seminars at Messiah College

Six years ago, a comprehensive general education revision replaced traditional English composition classes with First Year Seminars—small (16 students), 3-credit courses designed around a specific theme or topic. The seminars provide first-year students with an “introduction to the intellectual life of the college,” with particular emphasis on reading, writing, critical thinking, and discussion. Seminar topics may include television’s impact on society, Shakespeare in love, animal rights, the United States as a nation of immigrants, and Bob Dylan’s impact on 20th-century America. Each spring, the Library Instruction Coordinator and other librarians participate in First Year Seminar faculty development workshops.

Just as librarians at the University at Albany were involved with Project Renaissance from its inception, librarians at Messiah College have been involved with the integration of information literacy competencies into the First Year Seminar curriculum from the beginning. Information literacy objectives (listed below) now join other First Year Seminar objectives, such as analytical thinking and writing skills.

Information Literacy Objectives

The information literacy objectives of the First Year Seminar are explicit. Students will:

- a. know the location and function of essential areas in the library (reference and circulation desks, online catalog, reference collection, periodicals, stacks, and media services);
- b. know how to locate and check out library materials;

- c. understand that materials not owned by the library can be obtained from other sources;
- d. be able to focus and articulate their information needs and identify key concepts of their topic;
- e. understand the difference between controlled vocabulary (subject headings or descriptors assigned by the producer of an index or database) and key words;
- f. use key concepts to find resources on a topic by using the online catalog, periodical indexes, and other sources as needed;
- g. interpret bibliographic citations from the search results and locate the materials cited;
- h. evaluate the information retrieved, discerning the strengths, limitations, and usefulness in relation to a topic;
- i. incorporate retrieved information into their own texts. (Messiah College, 1998, p. 3)

Each seminar is assigned a librarian who collaborates with the class instructor to plan creative student assignments. In fact, a First Year Seminar syllabus will not be approved by the college Writing Director unless the instructor has consulted with his or her seminar librarian concerning the library-related assignment(s). This early consultation allows librarians to tailor instruction of basic information literacy competencies to class assignments.

Library Instruction

Direct librarian interaction with seminar students consists of 2 hands-on class periods in a computer lab. Session 1

- introduces students to some of the resources accessible via the library home page;
- helps students apply critical thinking by breaking their topics into key terms or concepts;
- allows students to discover the importance of Boolean logic in narrowing or broadening search results;
- gives students experience using the library's online catalog to identify books relevant to their topics.

Session 2 focuses on searching for periodical articles using two major collections of databases, with some attention given to the difference between popular and scholarly articles. An active learning exercise gives students experience in selecting an appropriate database for a topic. A typical question used for this activity is, What database(s) would you select to find articles on sexual harassment of women in the workplace? In pairs, students are directed to select and search in a database they think will provide citations to relevant articles and then to report back to the class with their results. Students are encouraged to think critically about the database they select by considering the following questions from a handout titled “Questions to Ask About Your Database”:

1. What subject area(s) does it cover?
2. What time period does it cover?
3. What types of material does it cover (e.g., newspapers, journals, books, videos)?
4. How much information does it give? (e.g., just a citation, full text)?
5. How do you search by subject? By keyword?
6. In what ways should you limit? (By date? By language?)

During the group feedback time, it becomes clear that there is no one “right” database in which to find articles on sexual harassment of women in the workplace. Students have successfully located pertinent articles on this topic in education, social sciences, business, medical, and other subject-specific databases.

Computer lab sessions work best when instructors discuss the library-related assignment with students prior to the library instruction session; they work even better when students are required to come to class with at least a preliminary idea for a topic. Some instructors even ask students to arrive with a topic that has been narrowed down to a workable level. For example, instead of choosing the subject “college sports,” a student might narrow his or her topic to “drug use by college athletes” or “Title IX’s impact on women’s college sports.” If students have not refined their topics, the librarian uses a sample broad topic and models—with student input—how to focus and choose key terms for a topic.

Time is allowed at the end of periodical database lab sessions for students to begin working on their own assignments: experimenting with online searching techniques and focusing, perhaps even modifying, their topics. Students appreciate having both the librarian and their instructor available to advise them.

General Education Focus Shift

Implementing this type of general education course signaled a change in the way writing was taught at Messiah College. Previously, writing instruction in a freshman ancient history course focused on a 5–7-page research paper. Students were taught how to write papers suitable for the discipline of History. With the change to First Year Seminars, however, the focus shifted. Four or 5 short papers (2–3 pages each) are assigned, one of which must incorporate relevant book and periodical article sources. Learning to write longer research papers now resides within specific disciplines; psychology majors, for example, learn how to write in the style expected by professionals in the field of psychology. As students progress in their majors, the departmental liaison librarian teams up with faculty in selected classes to build upon research concepts learned during First Year Seminar. In these class sessions, students are introduced to the scholarly literature of their discipline, they learn how to construct more sophisticated search strategies—utilizing relevant terms from a subject thesaurus—and are shown how to implement and manipulate the searches in subject-specific databases.

Because First Year Seminar research papers are short in length and because the goals are for students to approach their topics critically—to assess the value of resources they locate and to complete their research successfully—assignments need to be thought out carefully. Instructors often assign compare/contrast or persuasive papers that require students to critically evaluate the library resources they select to support their theses. For example, in a class on animal rights, an ethics professor asked students to develop and defend a position on a controversial ethical issue relating to animal rights. Students were required to use class readings, plus a popular magazine or newspaper article, an article from an

academic journal, and a book to support their position. The hypothetical audience to be persuaded by the arguments articulated in the students' papers was readers of popular magazines.

Ideally, the librarian and instructor try out online catalog and database searching well in advance, to ensure that an assignment is workable. What may sometimes seem like an excellent assignment can, in fact, turn out to be extremely difficult to complete when students are limited to in-house library sources. Because the time frame for the assignments is rather tight, students generally are unable to tap interlibrary loan resources. It is critical, therefore, that students' research needs can be satisfied with appropriate resources either from the library or from a library-licensed database.

Messiah College Assessment

Pre-library instruction surveys show that the majority of first-year students at Messiah College experience anxiety about the overwhelming size of the library and their ability to find appropriate resources. At this stage, typical responses to the question, "What worries/bothers you most about library research in college?" include the following: "Won't know where to start," "I can never narrow my searches and I get too much information," "The library is really big," "That I'll feel stupid asking questions," and, finally, a very honest, "I'm just plain scared." As Loomis and Fink (1993) report, studies show that most first-year students have a high level of anxiety about using college or university libraries and students are reluctant to ask librarians for assistance (p. 60). A study by Warmkessel (1992) found that even honors students (thought by their instructors to be confident library users) were so overwhelmed by a university library that they resorted to their local public libraries to do research (p. 176). An end-of-semester assessment tool administered to Messiah College First Year Seminar students reveals that

- Over 95% feel comfortable asking a librarian for help.
- Over 94% have an "adequate" or better level of confidence about using library resources for future projects.

- A majority (ranging from 78% to 95%, depending on the question) understands the concepts outlined in the information literacy objectives (listed previously).

Questions that receive lower results help librarians better focus their instruction in subsequent semesters. Students' understanding of the Boolean operator "OR" and the Library of Congress call number system has been weak. Therefore, librarians are trying to find more effective ways to explain these concepts. In the past, the end-of-semester assessment tool was completed anonymously by students. Beginning in the fall of 2000, the tool will be given as a test on a pass/fail basis. Students who fail the test will have the option to meet with a librarian and retake (another version) of the test. If a failing grade remains unchanged, the student will fail First Year Seminar. This change, endorsed by the faculty, accomplishes two things: it sends a message to students that information literacy competencies are important and it presumes that students will take the test more carefully, knowing that they are accountable for its content. An additional mode of assessment—creating a rubric to assess students' bibliographies—is in the planning stage as part of a larger college-wide writing assessment project.

Most First Year Seminar faculty appreciate and support the information literacy instruction component of the seminars. A sports sociology faculty member who taught a seminar for 5 years reports: "The instruction provided by [the librarian] . . . was invaluable to students, many of whom felt lost in researching for various subject papers." Other faculty members were equally appreciative in their responses. An education professor commented, "Having the librarian provide our first-year students with an introduction to how one should approach an academic search for books and articles is 'priceless' . . . insur[ing] that the students [can] begin their projects with confidence." And a language professor stated, "The urgency for librarians to intervene in the use of mouse clicks by students has never been more important. . . . Their task with first-year students is immeasurably important to the continued academic life of the more mature learner."

Other Observations

Since the inception of the First Year Seminar program, reference librarians have noticed a reduction in the number of location questions asked by first-year students. Librarians who work with students in their majors are enjoying a smoother transition to upper-level library instruction and are able to build upon foundational competencies acquired in First Year Seminar classes. Prior to the First Year Seminar program, junior education majors consistently expressed appreciation for instruction in the use of the ERIC database, but they also admitted to continued confusion. At the time, ERIC instruction included an introduction to basic searching concepts along with more sophisticated searching techniques necessary for optimal use of the database. Three years after the First Year Seminar library instruction was in place, written assessment comments sounded much different. Typical observations follow: “It was mostly a review of sessions from other classes” and “. . . a lot of it I already knew.” Even though students had not received ERIC instruction previously, their comments clearly revealed that the searching concepts and techniques learned during First Year Seminar had been absorbed. As a result of this feedback, subsequent upper-level ERIC classes have been able to focus on discipline-related concerns, thus bringing students to a higher level in their critical-thinking and literature-searching abilities. Student responses to the new approach remain positive.

Problems Encountered with First Year Seminars at Messiah College

The First Year Seminar curriculum currently does not include instruction in the use and evaluation of Internet resources—something the librarians see as a weakness, particularly in view of society’s increasing reliance upon the Internet as a source of information. In fact, the use and evaluation of Internet resources often remains unaddressed in upper-level classes within the disciplines. The college’s general education curriculum will be under review soon, and the librarians plan to take the opportunity to encourage the incorporation of Internet-related information literacy competencies. Perhaps a Web-based tutorial will be used to orient

students to the library's online catalog, which would free some class time for Web searching and evaluation.

Another problem is that some First Year Seminar topics are so specialized that it is difficult for students to complete library-related assignments with sources introduced at the first-year level. When this occurs, the seminar's liaison librarian tries to brainstorm with the instructor to develop an alternative assignment that meets the desired objectives.

Benefits for University at Albany and Messiah College

As mentioned earlier, first-year students are frequently anxious about using a college or university library for the first time. Students become even more anxious when directions for research-based assignments are unclear or when key resources are either misidentified in a syllabus or simply do not exist. By working together, classroom faculty and librarians can ensure that student assignments are realistic and appropriate, given the resources available. Such teamwork benefits everyone, but particularly the students, who gain confidence and competence with library-related research early in their college experience.

The programs described in this article have fostered benefits beyond increased information literacy competencies for first-year students. Classroom faculty and librarians have forged closer partnerships that have proved valuable in committee work and on research projects. At the University at Albany, the Project Renaissance librarian was asked to speak about research technologies at a faculty development seminar for teachers of diversity courses. At Messiah College, the Instruction Coordinator was asked by a former First Year Seminar instructor to serve on a task force that is addressing faculty information technology needs from the perspective of teaching and learning. Messiah College faculty and librarians have also pooled their efforts within the disciplines and have published articles and book chapters on those collaborations.

Conclusion

Students are rarely savvy consumers of information when they arrive at college. Faculty and librarians must intervene to prepare them for the challenges of effectively seeking, evaluating, and using information. Beginning instruction for information literacy in the students' first year is optimal, for it allows students to use and build upon the newly acquired competencies throughout their entire academic career and beyond. The proliferation of electronic resources only assures the likelihood that students will find a surfeit of material—much of it not germane to their research. The models presented herein suggest not only how library instruction can be incorporated into first-year experience programs and courses, but also the short- and long-term benefits that accrue to the participants. As Ernest Boyer points out, “The challenge is not only to teach students how to use the new technology but also to encourage them to ask when and why it should be used” (1987, p. 173).

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