A study of articles from 37 library and information science journals published in 1985 revealed that only 6 percent of the research articles focused on information seeking. Further, only a few of those articles analyzed the end-users' information-seeking behaviors and information uses. Although other user-oriented studies may have been carried out more recently, research on information seeking has been conducted largely from an institutional perspective.

This study was initiated partly because of the paucity of user-oriented research. When planning public services for students, librarians may feel as if they are operating in an institutional and professional vacuum. Do undergraduates, in fact, have a view of research that is different from that of librarians and faculty? A better understanding of student perceptions will help educators provide better direction for students.

Qualitative research methods were selected for this study for two reasons. First, the kind of information sought in this study is tied to the context of the undergraduate information-seeking experience, something that would be difficult to quantify. Second, this study attempts to circumvent professional wisdom and find a theory of behavior based on what students themselves think of the information-seeking process. Qualitative research has been widely used to develop theories grounded in everyday reality, which may then be refined and tested using quantitative approaches.

The Literature
A few recent studies of student information-seeking behaviors have relied upon qualitative methods. Mellon developed a theory of “library anxiety” by examining journals written by English composition students on their research processes. Kuhlthau used various documents prepared by students, combined with case studies, to develop, test, and refine a cognitive model of the search process. Fister interviewed a group of “successful” students and discovered that they used a variety of approaches to complete their papers, few of which reflect strategies taught in bibliographic instruction classes.

These studies focused on the affective and cognitive aspects of the undergraduate research process. The research presented here suggests there is also a utilitarian component to research which is influenced by social interaction.

The Study
Focus groups have been widely used in marketing research to test customer reaction to certain products—a sample of subjects is selected to discuss product-related questions posed by a moderator. Often, participants take part in several focus groups and are given a follow-up survey that is based, in part, on their discussions. In library science, focus groups have been used in a similar manner to evaluate library services.

This type of research can be quite expensive since experts are often hired to moderate the groups and participants are often paid for their time.

This study relied on a less formal, less costly approach. The librarian/researcher moderated the groups and the students were paid in chocolate chip cookies. It has been argued that a biased, inexperienced moderator may be ineffective in deriving useful results from the participants of focus groups. The purpose of this research, however, differed from that of typical marketing research. The point was not to evaluate the effectiveness of a product or serv-
ice, but to provide a forum for generating new ideas. Since many kinds of responses can be considered useful for laying groundwork for theory, the moderator’s expertise and objectivity may be less essential.

Since only two focus groups could be organized for this study, individual interviews were also used both to supplement the data gathered from the focus groups and to allow the researcher to compare findings from two different study methods.

**The participants.** Student library assistants were recruited for the study from many library departments—e.g., reference, government documents, periodicals, and technical services—and thus had different perspectives on how a library functions. While acknowledging the potential biases inherent in selecting subjects from the library for a library-related study, the researcher felt that the group’s diverse experiences in conducting research—revealed during the focus groups and interviews—served the purpose of this study well. Subjects were not asked about previous library research experience or previous library instruction prior to participating in the study, and, in fact, the data suggest that these library assistants were no more prepared than other students to conduct research in the library, a point that might be pursued in future research.

A total of 16 undergraduates participated in the study—12 students were interviewed in two 6-member focus groups that lasted 90 minutes each, and 4 students were interviewed individually for 45 minutes to an hour each. To allow comparison by academic status, subjects were divided into two groups: Focus Group 1 consisted of juniors and seniors; Focus Group 2 contained the freshmen and sophomores. The pool of participants was made up of 7 seniors, 2 juniors, 5 sophomores, and 2 freshmen, 13 of which were female. Students in the study declared majors in a variety of areas of the social sciences and humanities, but not in the sciences.

In future studies, a more inclusive cross-section of the student population, in terms of academic class, major, and gender, might be pursued.

**Methodology.** The researcher conducted and recorded all focus group sessions and interviews in a room in the library. (The recordings were then transcribed to facilitate analysis.) The same questions were used to guide discussion with all students, and all students were asked to envision past research projects in answering the questions to better remember the details and context of the experience. A sample of the questions used is provided in Figure 1. The researcher wanted to elicit the emotional, situational, and personal factors that may have affected students’ choices at various stages of the research process. Inspired by Kuhlthau’s model, the researcher divided the list of interview questions into five parts: selecting the topic, conducting preliminary research, gathering data, writing the paper, and completing the project.

The researcher tried to avoid asking leading questions about the library during the focus groups and interviews. For instance, she never mentioned the library or any research tools by name, allowing students to set the scene in their own language, and she assiduously avoided “correcting” students’ memories or suggesting alternative approaches, except as necessary for clarification. It should be noted that none of the students in this study mentioned that they’d had any library instruction, an omission that might indicate either a lack of exposure to BI or a lack of significance placed on that exposure in terms of their recollections of the research process.

**Benefits of Each Method**

Using both focus groups and individual interviews allowed the researcher to exploit the merits of both methods, thereby producing a richer source of data than either might have provided alone.

**Focus groups.** In the focus groups, the researcher acted more as a moderator than an interviewer, working to keep the conversation flowing in the intended direction rather than focusing on individual responses. This provided several advantages as far as data collection was concerned. The participants tended to interact with one another rather than with the researcher, providing a greater emphasis on their points of view. Themes emerged naturally as students responded to one another’s experiences. For instance, in one focus group students had similar tales to tell about the frustrations of dealing with microfilm, the difficulty of using the library late at night, and the influence of grades on their strategies.

In contrast, the researcher was much more liable to influence the course and content of the conversation in the individual interviews, where student responses were more dependent on interaction with the interviewer. For instance, in one interview a self-conscious student tentatively described her feelings at a particular stage of research, then queried nervously: “How do most people feel?” It was difficult to avoid influencing responses when students wanted assurances that they were providing the “correct” answer, as if they were being evaluated. Participants in the focus groups, however, were instantly “rewarded” with their cohorts’ responses rather than influenced by the interviewer. In fact, the focus groups created a forum for sharing experiences in which those participants who were better able to articulate common issues facilitated discussion by the rest.

Another advantage of focus groups is that they required less intellectual and emotional energy on the part of the interviewer. The groups essentially ran themselves while the individual interviews required more finesse from the interviewer, ranging from putting participants at ease to coaxing them back to the subject. In addition, the focus groups were more efficient. It took about four hours to interview four individuals and only three hours to conduct the two focus groups in which twelve students participated.

**Interviews.** Interviewing students in individual sessions also had advantages. First, each student could describe his or her experiences fully, without interruption, resulting in more abundant and richer data. In contrast, group responses were necessarily shorter and perhaps influenced by what others in the group emphasized.

Also, individual interviews were easier to control and channel than focus groups. For instance, the need for follow-up questions was easier to detect. In the groups, it was harder to keep up with all the points raised. As a result the need to clarify a point was often discovered belatedly, as the researcher listened to the tape.

Finally, it was easier to schedule interviews with four individuals than to schedule two group meetings. Even
Theoretical Issues
Analyzing qualitative data—coding, categorizing, and comparing data until a theme emerges—is a complex, time-consuming process. Since what is gleaned from the data depends on the researcher’s interests, perceptions, and experience, critics of qualitative research question the scientific value of its results. The strength of this approach, however, is that impressions, hypotheses, and ultimately theories spring from participants’ memories of real-life activities and feelings rather than from observing participants in experimental situations. This can be of great value in social science research.

The data in this study was analyzed using the grounded theory approach suggested by Strauss and Corbin, in which responses are broken down, categorized, and then reconstructed to allow new ideas to emerge. While gathering data, the researcher used the interview questions to stimulate responses and provide a frame of reference for the students. When coding, however, the researcher treated responses as discrete units of data that fell into one or more of the following categories: topic selection, resource gathering, resources used, writing, feelings, teacher-student relations, librarian-student relations, and personal/situational factors. The researcher then concentrated on discovering themes that emerged across categories, focusing on issues that helped explain why students made certain research decisions.

The subjectivity of the analysis and the small population sample may not favor the derivation of substantive theory from this study. The findings may be revealing enough, however, to inspire and provide guidance for the design of future research.

Findings
The dominant theme to emerge from the findings of this study was that undergraduates tended to look for the easiest, least painful way to complete a research project in a timely and satisfactory fashion. Although many students reported having a meaningful research experience, their desire for knowledge seemed to have little influence on how the process was negotiated. In addition, none of the students used the kind of organized strategy librarians often teach in bibliographic instruction sessions. Instead they used various tactics, often seemingly haphazard, that appeared to be driven more by instrumental and social rewards and punishments encountered along the way than by any premeditated strategy.

Doing it quick and dirty. For instance, many students reported using methods they thought would get them in and out of the library as quickly as possible. Unfortunately, they were apparently unaware that sometimes these methods were inappropriate and/or inefficient. The most common “excuse” for not wanting to linger in the library was lack of time, due either to pressing schedules or to the last-minute nature of the efforts. In fact, procrastination and the do-or-die research and writing that resulted seemed to be a kind of status symbol among students. One sophomore claimed doing a paper at the last minute actually helped her do it better.

Some students perceived electronic reference sources to be the best option for obtaining fast information. The online catalog and InfoTrac were the most popular choices; in fact, only two students mentioned using one of the other seven computer indexes available at the library.

Using limited resources. For many students, conducting “easy” research meant starting with something familiar. Students who mentioned an aversion to technology limited themselves to the card catalog (which had not been added to for two years), depriving themselves of some of the library’s most current holdings. Two seniors, who knew from working in the library where books in their fields were shelved, went directly to the stacks. Only two students started with encyclopedias, a technique both had used before to familiarize themselves with a subject.

Two students, who were not averse to spending time in the library, looked for articles by browsing periodicals already familiar to them. One went through literary journals to find information on Beat poets; the other spent several frustrating hours browsing dozens of reels of the New York Times on microfilm (only later did he discover the New York Times Index). In both cases, the students seemed unaware of alternative ways to search for articles.

Figure 1
A Sample of Questions Used to Guide Focus Groups and Interviews

<table>
<thead>
<tr>
<th>I. Selecting the Topic</th>
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<tr>
<td>A. Think of the most recent paper that you wrote which required consultation of sources outside of class. For which course did you write it?</td>
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<tr>
<td>B. How did you feel when the paper was assigned?</td>
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<td>C. What factors led to the selection of a topic for the paper?</td>
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<th>II. Conducting Preliminary Research</th>
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<tr>
<td>A. How did you start looking for information on your topic?</td>
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<td>B. How did you feel at this beginning stage of research?</td>
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<tr>
<td>C. Were there any factors in your personal life that influenced any of your choices?</td>
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<th>III. Gathering Data</th>
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<tbody>
<tr>
<td>A. What strategies did you use? What sources?</td>
</tr>
<tr>
<td>B. How did you feel at various points?</td>
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<tr>
<td>C. What situations influenced how you felt? Were there any personal factors that helped or hindered you?</td>
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<th>IV. Writing the Paper</th>
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<tr>
<td>A. How did you pull all the information together so you could write the paper? How long did the process take?</td>
</tr>
<tr>
<td>B. How did you feel about the process? Personal or situational factors?</td>
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<th>V. Completing the Project</th>
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<tbody>
<tr>
<td>A. How did you feel when you handed the paper in?</td>
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<tr>
<td>B. Would you do any part of the process differently another time? Did you learn anything of value along the way to improve your strategy next time?</td>
</tr>
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Another senior admitted she used only books in her research because she didn't know how to find articles. A senior psychology major who consulted books exclusively asserted: "You can get more out of a book that is thoroughly researched than out of a five-page article." Similarly, a business major, used to searching for business articles on InfoTrac, assumed books would be of no use to him. Many students avoided using microfilm resources altogether because they were unfamiliar with and intimidated by the microfilm reader/printer machines.

**Feeling lost.** Lack of familiarity with the library and its resources, in general, was a significant obstacle to student research. One student seemed completely unfamiliar with using the library, even though she worked there. Her comments on beginning her research are classic expressions of "library anxiety" as described by Mellon:

I found a book that had titles of articles. I didn't understand why they had a book of abstracts...foreign language teaching abstracts...I didn't know how to find articles. I didn't know what order the books were in. They compacted everything into a book and had it bound by [institution] Libraries. It was very confusing. I went to the computer, found books, went to the reference area. The stuff didn't make any sense. I couldn't find the right article. When I was looking at books in the reference area that tell you specific names that the online uses, I saw "Language and Languages" which made no sense to me. [Then] I got help from my teacher; he went right to everything I looked under "Spanish and Spain."

Other students expressed similar confusion. One student noted that her excitement to start research was dashed by not knowing what to do when she got to the library: "As a freshman I expected to know how to use and/or where sources were located. A sophomore who had to write a philosophical essay on the existence of God turned first to a friend's grandmother known for her knowledge of the Bible. Then the student went to the library to look at philosophy reference materials, armed with some Bible verses to support her own points. A senior asked a fellow psychology major who had conducted research on the same topic for suggestions on books she could use to get started. Another senior located magazines and newspapers recommended by a classmate she met by chance in the library. One student discovered that a classmate was interested in exploring the same subject and they went to the library together after arranging to do a joint project. It appears, then, that classmates and friends constitute an important source of information for undergraduates.

**Consulting with course instructors.** Most students seemed reluctant to ask teachers and librarians for help. Nevertheless, when they did ask, the upper division students relied more on teachers than librarians, while lower division students turned more often to librarians. Student decisions were influenced by the perceived benefits and/or costs associated with consulting certain authorities. For instance, several seniors reported that wanting good grades motivated them to ask their course instructors for help. They found it important to pinpoint faculty expectations and then modify strategies to meet them.

One senior noted: "[The instructor] made it easy for us. . . . [She] basically told us what she wanted. . . . All I'm doing is to fill in the blanks, but that's what I need. I don't have time to waste. I'll do anything to save my GPA." She likened writing research papers to a mechanized process wherein students crank out papers as ordered, and teachers assign them grades. Another student lamented that no matter how interesting the topic, she didn't enjoy conducting the kind of research or writing the kind of paper that she believed was expected of her.

Yet another student seemed to concur with this view: "I got B's no matter what I did and I'd work forever and still make a B. Then I went to the teacher and asked what she wanted and she told me. So I wrote just what she wanted and got A's . . . [even though] it's not what I agreed with." Some students, then, seemed to prefer guidance from those who controlled their academic success.

**Turning to librarians.** Nothing so compelling drove these students to consult librarians. Several students acknowledged they had or would ask a librarian for help, but were unable to elaborate on the situation. Others thought asking a librarian was tantamount to proclaiming failure. As one student put it, "that's like admitting you're an idiot." A senior said she was embarrassed to ask for help because the librarian on duty talked so loudly she feared her ignorance would be broadcast. Still others never even considered asking a librarian. One reference room shelfer, a senior, was simply amazed to find that students bothered librarians with questions: "I never
thought of going to a librarian.” Similarly, a junior admitted spending fruitless energy in the special collections room looking for material available in the main collection. It never occurred to her to consult library staff. Instead, she delayed her search to ask her professor, who directed her to the online catalog.

Another senior mentioned that he asked only certain librarians for help, based on his perception of their accessibility. His comments highlight the importance of the risk-reward equation in asking those in authority for help.

Some people have bad days and they’re not really receptive to your questions. Some are nice all the time, like [named librarian] is always in a good mood. Some of them can be a little cold at times. I can see why someone who didn’t know some of the librarians were a little nicer would [avoid] all of them.

It seems, then, that students often misunderstood the librarians’ role, and, even if they did not, they often felt that consulting a librarian was not worth the risk of embarrassment or communication failure.

Conclusions
This exploratory study suggests that students use research strategies that they perceive will reap the greatest benefits with the least cost in terms of time or social effort. The fact that students want to avoid interactions that they believe may be painful should not be surprising. Educators, however, should be aware of these perceptions and how they influence students’ undergraduate experience. Perhaps students are inadvertently circumventing the very experience they are intended to gain. If factors such as the speed of the research process, a limited knowledge of reference tools, and fear of failure are determining students’ approaches to writing research papers, they may be missing the point of the assignments. By using sources primarily because they are familiar and/or easy to use, students may bypass an avenue of research that will not only be more relevant, but also more productive.

Several questions about how students negotiate the research process have been raised in this study. What factors influence students’ choice of whom to consult for help in the research process? If students’ peers are an important information-seeking/gathering source, perhaps future studies should explore the influence that peer networks have on student research. Is there really a dichotomy of information-seeking behavior between the lower and upper division undergraduates? If so, knowledge of this difference might help librarians direct their energies more effectively. Finally, what do educators expect students to gain from the research experience? Future studies might examine the reasons teachers assign research papers or what librarians perceive their roles to be in the research process. Are educational goals realized from such assignments? Do librarians provide appropriate assistance given the demands of the research assignment? An examination of expectations versus reality might expose the need for greater librarian-teacher collaboration on research assignments.

Focus groups proved a quick and effective tool for eliciting relatively spontaneous responses from participants. Interviews provided more detailed data, allowing a more complete picture of student research behavior to emerge. Morgan notes that, although focus groups originated in the field of sociology, they have been developed primarily as a market research tool and are underutilized in the other social sciences. Perhaps less formal focus group research, as was done in this study, should be considered more often as a viable complement to other methods of qualitative research in the library science field.

References
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