Information Literacy Skills:
An Exploratory Focus Group Study
of Student Perceptions

by Heather Morrison

This article reports the results of an exploratory study using focus group methodology in information literacy research. A small focus group—seven undergraduate students at Concordia University College of Alberta— discussed the concept of information literacy and the role of the undergraduate library in developing information literacy skills. Participants perceived information literacy as valuable, and agreed that the library plays an important role in developing the skill of locating information. Moreover, the focus group method demonstrated potential for generating useful data in this field, particularly hypotheses for further research.

T he objective of this exploratory study was to examine the undergraduate perspective on the role of the library in developing information literacy skills. The focus group method, a method that does not appear in Sherri Edwards' list of research methodologies reported in the journal literature on bibliographic instruction research from 1977 to 1991,[1] was chosen as a new approach to research in this area.

This methodology has been used successfully in a number of library studies in recent years, most often to obtain client evaluations of library services. Barbara Valentine demonstrated its usefulness in a study of undergraduate research behavior, comparing this method with individual interviews and finding that the two yielded similar

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information.[2] In comparison to individual interviews, however, focus group studies tend to emphasize the participants' rather than the researchers' point of view and offer the opportunity to observe a large amount of interaction in a short period of time.[3] Moreover, the spontaneous nature of focus groups, also attributable to the participants interacting with one another, can provide interesting hypotheses for further research in the emerging field of information literacy.

METHODOLOGY

A focus group study was conducted at Concordia University College of Alberta, in Edmonton, an accredited undergraduate institution offering three- and four-year programs in arts and science to approximately 1,300 full-time equivalent students. The library contains over 100,000 volumes and has 11 full-time staff members, including 3 professional librarians.

The research proposal was reviewed and approved by the Research Ethics Committee of the School of Library and Information Studies, University of Alberta. Permission to conduct the study at Concordia was obtained from the Head Librarian, the chair of Concordia's Research Committee, and the Dean of Student Affairs at Concordia. The focus group script was pretested with a library and information studies Advanced Research Methodology class, and with two student library assistants at Concordia.

The focus group session was conducted by the author, the Circulation Services Coordinator at Concordia University College library. The literature on focus group methodology indicates that the ideal moderator is not affiliated with the group being studied. One reason for this is the marketing orientation of most focus group research: usually, it is the product or service of a particular company or institution that is being studied. In this case, the major purpose of the study was not to evaluate the effectiveness of Concordia's library programming, but to explore students' thoughts on information literacy itself and ways for libraries to contribute to the development of information literacy skills. Because of this focus, the affiliation of the moderator with the institution being studied was not considered to be a serious problem.

Focus group participants were recruited in three ways: First, through a poster campaign. This was not very effective, perhaps because of poor timing; the posters were not put up until the middle of the semester, when students may already have been too busy to notice them, or to volunteer.

Second, through classroom announcements by several professors. One professor spontaneously decided to offer credit to students who participated, which resulted in a high percentage of participants

coming from one class. The success of this method suggests that future researchers might consider targeting particular class groups and working with faculty to recruit students through credit assignments.

Third, through personal requests by the author. In contrast to the classroom announcements, which produced three participants from the same program, this method yielded participants with three different majors. The author also targeted more on frequent library users, as the purpose of the study was to examine the potential benefits of library use rather than to assess the actual impact of this library on the student population at this institution.

Recruitment was aimed mainly at second-year and higher level students. A cover letter was prepared for potential participants; for the most part, however, contents of the letter were discussed verbally with the participants instead.

The focus group consisted of six undergraduate students and the husband of one of the students, who actively and regularly assists with the wife's library research. Three students were in the second year of a transfer program to the Bachelor of Commerce program at the University of Alberta, one student was a third-year psychology major, one was a third-year biology major with a chemistry minor, and one student was a second-year English major. This sample is not representative of the student population at Concordia, where psychology and education are the most popular majors.

The focus group session lasted one and one-half hours. It was moderated by the author, and audiotaped by an assistant observer. The discussion focused on the four skills, as identified by the American Library Association, that an information literate person can do: recognize a need for information, locate needed information, evaluate information sources, and effectively use information.

In the first part of the session, the group was asked to discuss these four skills for approximately ten minutes each (see Appendix A: Focus Group Script). Then, the students were asked individually to rank, in writing, the four skills in terms of difficulty. This was followed by a brief discussion of information literacy itself, evaluating its usefulness and considering whether students should attain a certain level of information literacy skills when pursuing an undergraduate degree. Finally, the students discussed the role of the library in developing each information literacy skill.

Overall, the focus group session was successful in producing a wealth of information, and in introducing issues not foreseen by the researchers. The only problem was that the allotted time was too short for the amount of material. Probably a minimum of two hours should be set aside for future focus group sessions.

One limitation of this study is that, because of time restraints, only one focus group session was conducted. Typically, at least three or four groups are studied to avoid the possibility of idiosyncratic results or an unresponsive group.[4] As exploratory research, however, this study may have produced results sufficiently indicative of trends in the general population to be useful, particularly in generating hypotheses for further research.

Data were analyzed by a combination of summarizing the discussions, tabulating the written exercise, and detailed content analysis. The summary of discussion was partially produced during the session itself, by periodically recapitulating the group's observation, on a particular point and asking for feedback, following the model outlined by Richard Krueger.[5] Afterwards, the session was transcribed and carefully reviewed. Detailed content analysis of the 52-page transcript involved breaking down group discussion into individual concepts, grouping concepts together into related factors, and analyzing the most frequently mentioned factors.

RESULTS
Summary of Discussion

This section summarizes the focus group participants' responses concerning the four main information literacy skills (recognizing a need for information, locating information, evaluating information, and effectively using information). There was some disagreement about whether or not recognizing a need for information constitutes a "skill." At least one student felt strongly that "anyone can recognize a need for information." Other students perceived an art to recognizing this need, or perhaps the attributes of curiosity or open-mindedness.

In contrast, the group unanimously perceived a skill in locating information. Students commented that locating information is particularly challenging today because of the recent technologies and the abundance of sources. They also identified an attitudinal factor in locating information, in that one must put some effort into seeking it.

Group consensus appeared to be that evaluating information is the most advanced of the four skills. Factors that students considered to be part of evaluating information included: currency, credibility, relevance, originality, and the time required to use it. The group lacked confidence in their ability to evaluate information, particularly its credibility.

There was less agreement about whether effectively using information is a skill. In particular, the group struggled with the meaning of effective use of information, touching on such issues as formatting, plagiarizing, creating an original work, and the impact of the information on the reader.

Ranking of Information Literacy Skills

Students were asked to rank, in writing, the skills they perceived as "real skills," in terms of difficulty. Their written responses were quite consistent within the group, with a majority indicating the same placement for each skill, but differed from their conclusions in the discussion (see Table 1). In particular, using information effectively was not described as a complex skill in the discussion and elicited some disagreement about whether it was a skill at all; yet in the written exercise it was consistently ranked first or second in complexity.

Table 1
Ranking of Information Literacy Skills by Complexity

Skill	Ethnographic Summary	Written Exercise
Recognizing a need for information	4th*	4th*
Locating information	2nd	3rd
Evaluating information	1st	2nd
Effectively using information	3rd*	1st

*In assigning these rankings students questioned whether the activity is a skill.

The Value of Information Literacy

Students were asked to discuss whether information literacy is a valuable skill, and whether attaining a certain level of information literacy should be a requirement for an undergraduate degree. All students perceived information literacy as valuable, and almost all stated that some information literacy should be attained in the course of earning an undergraduate degree (one student did not answer this question).

The Role of the Library
in Developing Information Literacy Skills

Students agreed that skill in locating information is acquired from experience in using the library. They stressed the importance of students having positive experiences when they begin using the library, and of the library having sufficient and helpful staff. One student expounded at length on the benefits of bibliographic instruction sessions.

Some students also felt that the library can help to develop the skill of recognizing a need for information, in that browsing or broadening a search leads to information that one did not know existed. Students' comments on this idea were rather vague, suggesting that information found in this manner might help to stimulate curiosity or to suggest other avenues for research.

This vagueness notwithstanding, one might speculate that libraries can play a role in developing information literacy skills by providing resources and making them browsable. Creating a browsable collection may involve choosing user-friendly formats; for example, one participant talked about the importance of being able to "thumb through journals." Classification is important as well; after finding one book, students can browse around the call number range and find other materials related to their topic. This raises the interesting possibility that the ideal library search environment may not depend on complete efficiency in searching; sidetracking is sometimes useful in and of itself.

Evaluating and effectively using information were perceived as skills that would be primarily developed outside the library.

Content Analysis

The transcribed session was analyzed in detail: individual comments were coded and grouped into similar concepts, which were in turn grouped into factors. For example, positive references to the capability of information technology were grouped into the concept "technology is phenomenal" (a phrase used by one of the students), and this concept was then grouped under "technology factors." The analysis recorded both the number of times a concept was discussed (see Appendix B) and the number of students who discussed it.

Table 2
Information Literacy Factors of Most Interest to Students

Factors	Number of Mentions
Technology factors	40
Search strategy factors	37
Reference factors	36
Attitudinal/emotional factors	33
Evaluating information	28

The content analysis revealed five factors to be of significant interest to students (see Table 2). The ranking of these factors should be interpreted with caution, as the number of mentions may reflect ease of identifying the concepts they encompass and the tendency of some individuals with particular interests to comment more frequently. Clearly, however, the concepts within these factors were of recurring interest to the focus group. Note that "evaluating information" was addressed above, under the summary of discussion.

Technology Factors. Students discussed technology factors mainly in the context of locating information. The most frequently mentioned

concept was "keeping up with technology," which students saw as both a necessity and a source of anxiety. As one student remarked, "What happens if technology gets to a place where nobody can keep up with it?" Other students, however, were less concerned with keeping abreast of technology, instead focusing on its ability to meet their own needs.

The second most frequently mentioned concept was that "technology is phenomenal." Students especially liked the ability to access a lot of information at once. One student said, "I find that in recent years, the technology, the increase of that technology that the libraries are acquiring, this has enabled me to better ply myself in that field, like information literacy. I mean things like Infogate and that CD-ROM; I think they're just phenomenal research tools."

Search Strategy Factors. Surprisingly, the most frequently discussed concept—mentioned even more frequently than the four individual components of information, literacy presented during the first part of the session—was specificity. Some students felt frustrated with their inability to refine search topics. For example, students felt that certain topics tend to yield hit lists of hundreds of books in the library's catalog, more than one could reasonably examine to determine their relevance. There was consensus that lack of specificity is more of a problem in some disciplines—for example, the social sciences, humanities, and newer disciplines—than in others, such as the sciences.

On the other hand, some students seemed to enjoy browsing. They discussed search strategies of finding a call number location and then exploring books around that location, or thumbing through a stack of journals, noting that these methods promote interest in other subjects and stimulate further research.

Reference Factors. The majority of comments about reference reflected a positive outlook on assistance from library staff. Students were particularly appreciative of Concordia's staff, whom they regarded as "really, really nice." Some students praised the librarians' personal approach, others their knowledge.

There was much discussion about the importance of assistance when students first use the library. The students recognized that by initially asking lots of questions, they learn how to find information on their own.

Students also mentioned negative experiences with librarians. One had encountered a librarian who was arrogant and patronizing. Comments by other students, for example that library staff must get many "stupid" questions, and that some people might feel "too low to ask for a book," suggest that the fear of being patronized by library

"The frequency with which participants in the focus group referred to attitudinal/emotional factors, and the emphasis placed on positive experiences with library staff, particularly in the initial stages of learning to use a library, support the view that recognizing a need for information may produce anxiety."

staff is not uncommon. Also mentioned were library staff who were unwilling or too busy to give help, and the understaffing of libraries.

Attitudinal and Emotional Factors. There was considerable overlap between attitudinal/emotional factors and technology factors. Students had strong feelings about technology, both fearful and positive. Library anxiety was also frequently discussed; note, however, that the moderator had mentioned library anxiety at the beginning of the session, and specifically permitted discussion of it. One student related strongly to this phenomenon; others talked about it as something they had experienced in the past. Two other frequently mentioned concepts were curiosity and the will to locate information.

DISCUSSION
The students in this study supported the conclusion of the ALA's Presidential Committee on Information Literacy[6] that locating information, evaluating information, and effectively using information are component skills of information literacy. They tended to disagree, however, with the idea that recognizing a need for information is also a real skill. One possible explanation for this disagreement lies in the feelings of anxiety associated with the initial stages of information seeking. Carol Kuhlthau's intensive study of high school seniors found six stages of information seeking, four of which precede collecting information. The first stage, Initiation, is typically accompanied by feelings of uncertainty and apprehension, the third stage, Prefocus exploration, by feelings of confusion, uncertainty, and doubt.[7] The frequency with which participants in the focus group referred to attitudinal/emotional factors, and the emphasis placed on positive experiences with library staff, particularly in the initial stages of learning to use a library, support the view that recognizing a need for information may produce anxiety.

Perhaps, then, recognizing a need for information is not a skill per se, but an attitudinal/emotional component of information literacy. That is, the information literate person, on discovering a need for information, is able to deal with the emotional aspect and go on to the next stage, gathering information.

Students who saw recognizing a need for information as a skill associated it with curiosity or open-mindedness rather than any specific concrete technique; they also believed that this recognition would be acquired from using a library. One might speculate on a connection: in the process of learning to use a library, one overcomes anxiety by asking for and receiving assistance in an emotionally positive context. Through this process, anxiety is transformed into curiosity. This could be an avenue for further research.

In the eyes of students, the library clearly plays a role in helping them develop the skill of locating information, a challenging skill given today's information technology. When students first use the library, they need both reference assistance and bibliographic instruction.

Student research behavior as reflected in this study contrasts somewhat with the findings of Valentine's study.[8] Her participants favored searching methods that yielded maximum results with minimal time and minimal interaction with authority figures such as teachers and librarians. Although students in this focus group were also concerned with the time involved in gathering and using information, many also enjoyed less efficient searching methods such as browsing.

SUGGESTIONS FOR FURTHER RESEARCH

The results of this study suggest a number of possible directions for further research. Similar studies, asking the same or similar questions to different types of participants (faculty, librarians, graduate students, employers, freshmen) might clarify our understanding of information literacy and the associated skills. If the four skills discussed in this study are to be explored again, the phrase "recognizing a need for information" should be clearly defined for participants. Research on information literacy skills could also be conducted through interviews or surveys.

CONCLUSIONS

This study indicates that undergraduates regard information literacy as a valuable skill, and believe that a certain level of information literacy skill should be attained in the course of pursuing an undergraduate degree. The study also suggests, however, that more work must be done to define what constitutes information literacy. Locating, evaluating, and using information are all perceived by students in this study as valuable skills, but recognizing a need for information is not. Student perceptions of this last "skill" should be investigated in more depth.

Other conclusions of this study stem from students' perceptions about information literacy and their implications for roles that libraries play or might play. Clearly students believe the library already

plays an important role in helping them develop the complex skill of locating information. Their appreciation of bibliographic instruction and supportive reference service indicates that these remain crucial responsibilities of an undergraduate library. The combination of this appreciation, the receptivity to discussing library anxiety, and the mixed awe concerning new technologies suggests that libraries should recognize students' emotional as well as informational needs; librarians might, for example, address the topic of library anxiety in introductory bibliographic instruction. Students' lack of confidence in their ability to evaluate information reveals a need for further instruction in this skill. Finally, students' keen interest in discussing technology and search strategy factors, especially specificity, suggests that upper level students might appreciate bibliographic instruction in these areas, possibly in seminars.

REFERENCES
[1]Sherri Edwards, "Bibliographic Instruction Research: An Analysis of the Journal Literature from 1977 to 1991," *Research Strategies* 12 (Spring 1994): 68-78.
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[3]David L. Morgan, *Focus Groups as Qualitative Research* (Newbury Park, CA: Sage, 1988), p. 18ff.
[4]Alfred E. Goldman and Susan Schwartz McDonald, *The Group Depth Interview: Principles and Practice* (Englewood Cliffs, NJ: Prentice-Hall, 1987), p. 35.
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[6]American Library Association Presidential Committee on Information Literacy, *Final Report* (Chicago: ALA, 1989), p. 1.
[7]Carol Kuhlthau, *Seeking Meaning: A Process Approach to Library and Information Services* (Norwood, NJ: Ablex, 1993).
[8]Valentine, "Undergraduate Research Behavior."

Appendix A
Focus Group Script

Preamble
    My name is _____ . *I am the Circulation Services Coordinator at Concordia College Library, and also a student in the Master of Library and Information Studies program at the University of Alberta. This is* _____ , *who will be assisting me with audiovisual equipment and also taking notes. The session will be audiotaped. I would like to thank everyone for volunteering to*

Appendix A
Focus Group Script (cont'd)

participate in this focus group study, and also to remind you that you have a right to withdraw from the session at any time. I would also like to remind you that I consider your comments here to be confidential; I would appreciate it if each of you would also consider each other's comments to be confidential as well. Feel free to ask questions about the research project itself at any time. Does anyone have any questions about the session at this time?

Before we get into the actual discussion, I would just like to comment that the purpose of this study is to find out what your viewpoint is. This means that there are no wrong answers! When it comes to your opinion, you're the expert, so please feel free to say whatever comes to mind. I'd also like to briefly mention a phenomenon called library anxiety. Some researchers who have talked to people about how they feel when they do research in the library have found that a lot of people go through some anxiety in the process—they're not sure how to go about finding the information they need, they feel embarrassed about having to ask for help, they're worried that the way they're doing their research isn't the right way, that kind of thing. This isn't the focus of our discussion today, but I'm just mentioning this so you know that if that is how you feel, it's okay, you have a lot of company; it's okay to feel that way and it's okay to talk about it.

Also, since I work in the library here, I think I should mention that it's perfectly acceptable to criticize the way we do things in our library here. In fact, one of the reasons I'm doing this study here is to see if I can find some clues on how the library could improve on the way we do things, so if you point out something we do that could be improved, you're helping us, because we really do want to provide the best service we can, and we don't have any delusions about having achieved perfection at this point.

Introduction of the Topic

What I'd like to do now is to just briefly introduce the topic and explain how the focus group discussion works.

Some people think that there is a group of skills that people need to have, called information literacy. The basic idea is that, with scientific knowledge advancing so quickly and with the basis of our economy shifting from industry to information, there is a need for people to be able to find information, rather than just learning "the facts," because there are too many facts to learn and because "the facts" change so quickly. The American Library Association has come up with a definition of information literacy which I think is quite useful because it breaks down the concept into individual components. This breakdown is written over here (on easel):

Information-literate people can:
1. recognize a need for information
2. locate needed information
3. evaluate information sources
4. effectively use the needed information

What I'd like to do with this discussion is to answer the following three questions:

- *From your point of view, what does information literacy mean?*
- *Is a certain level of information literacy skills something that you should get in the course of an undergraduate degree?*

Appendix A
Focus Group Script (cont'd)

- *What is the role of the library in developing information literacy skills? This is the main focus of my study, so I'm planning on spending more time on this area than the other two.*

My role here is to get things started and make sure that all the areas get covered—other than that, it's mostly your show here. We can cover the points listed on the easel one at a time if that works best, but feel free to jump around from topic to topic as well.

To start things off, I would like to go around the room and have everyone say:
- *their name*
- *their major and year*
- *what you expect from your education in terms of information literacy skills*

(Time for Preamble, Introduction of Topic, and Introduction of Participants—10 minutes)

Section One
Thanks! Now, to get into the actual discussion, let's start with the first point: Information literate people can recognize a need for information. How easy or difficult is it to recognize a need for information, that is, is this a special skill or something that everyone has?

Start with quick anecdote.

Ask for examples of what it means to recognize a need for information (if necessary) (Discussion time—5 minutes)

Moderator—make sure everyone has contributed to the discussion.

Points 2, 3, 4—first of all, summarize any discussion on these points that have already occurred.

Information literature people can:
2. locate needed information
3. evaluate information sources
4. effectively use the needed information

Ask for examples (if necessary).

Moderator—make sure everyone has contributed to the discussion on each point. (Discussion time—15 minutes)

Closure—Section One: Summarize group discussion briefly and ask for feedback from the group.

Section Two
Is a certain level of information literacy skills something that you should get in the course of an undergraduate degree? (Discussion time—5 minutes)

Ranking of the four information literacy skills in terms of difficulty
- have paper for each person
- ask each person individually, then ask the group as a whole
(Discussion time—5 minutes)

Section Three
Now we get into the main area of discussion—what is the role of the library in developing information literacy skills?

Appendix A
Focus Group Script (cont'd)

I think it would be helpful to relate this to an actual experience in the library, so I'd like each of you to think of such an experience. This could be a research project for a term paper, or a search for information for personal interest, or whatever. This should be something that you've recently completed. The idea is to use this experience to help us focus, so if you think of something that's not related to this one experience, feel free to talk about that as well. Now to get started I'd like everyone to just very briefly talk about their one library experience. I'll go first...

Round Robin—ask each participant to summarize their perspective of the role of the library in developing information literacy skills at this point. (Discussion time—10 minutes)

After round robin: *Now let's relate these experiences to the four information literacy skills. What I'd like to do is to cover the following questions, using the four points on the board as a reference:*

* *Have your experiences in the library helped you to develop this skill?*
* *If yes: examples of how your experiences in the library have helped you to develop this skill.*

Moderator—make sure all four points are covered. Equal time for each point is not necessary as it is of interest which points generate the most discussion. Make sure everyone has contributed to the discussion on each point. (Discussion time—30 minutes)

Closure—summarize the group discussion in some detail and ask for feedback from the group. Allow at least 10 minutes for discussion. (Summary—5 minutes)

Thanks for your participation! As I mentioned before this session, anyone who is interested can have a copy of the final report on request. Are there any final questions?

Appendix B
Concepts Mentioned at Least Twice

Number of mentions	Concepts
28	Specificity
15	Locating information is a skill that is acquired through experience
13	GATE (the word used for the library's online catalog)
9	Keeping up with technology is a challenge
8	Multiple library access
8	Technology is phenomenal
6	Understaffing of libraries is a problem
5	Keywords
5	Locating information is a skill
5	Unawareness of the existence of information
5	Using information is a skill
5	Initially, people have to ask a lot of questions, then they acquire the skill of locating information

Appendix B
Concepts Mentioned at Least Twice (con't)

4	Library anxiety
4	Broader topic
4	Curiosity
4	Credibility
4	Evaluating information is a skill based on experience
4	Relevance is important in evaluating information
4	Evaluating information is a skill
4	Time factor in evaluating information (Can you use the information in the given time?)
4	Locating information has become more difficult over time
4	Personal approach of library staff is important
4	It takes skill to use technology
3	CD-ROM
3	Concordia's library staff are excellent
3	Information explosion
3	Information is not available in Concordia's library
3	Negative experience with a librarian at libraries other than Concordia
3	Recognizing a need for information is a skill that you acquire from using a library
3	Using information to have an impact on people
3	Willingness to locate information
2	Access to a librarian
2	Current information
2	Don't know—e.g., don't know what the call numbers mean, don't know what keywords to use
2	Perception that personal ability to evaluate information is lacking
2	First experiences in using a library are important
2	Information illiterate people will always be with us
2	Librarians can give you a lot more information than a computer can
2	Patronization by library staff
2	Barking up the wrong tree/asking stupid questions
2	Curiosity as an interpretation of "recognizing a need for information"
2	Recognizing a need for information is natural
2	Recognizing a need for information is a skill, not a natural ability

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