Developing Information-Seeking Skills in Occupational Therapy Students

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This paper discusses the importance of teaching occupational therapy students methods for finding information in libraries. It details the efforts at Ohio State University to supply this instruction and demonstrates the positive results of library user education as seen by the instructors of occupational therapy students. This partnership between librarians and classroom instructors can easily be adapted to any health sciences education program.

The rapid proliferation of information in our era has important implications for the education of health professionals, including occupational therapists. Health sciences students cannot afford to concentrate solely on learning subject-specific information and skills. To succeed professionally, they must also learn how to acquire, evaluate, and apply information from many different sources in a variety of subject areas.

Rationale for Course-Integrated Library Instruction

Much has been written in the medical library literature on the importance of acquiring “information literacy.” In describing a library education program for Health Services Administration students, Smith and Salisbury (1985) said the following:

The contemporary health care researcher is confronted by myriad bibliographic and content databases whose accessibility is dependent on... mastery of both generic research skills and the electronic medium itself. These trends... require that medical libraries and the academic constituents they serve forge creative partnerships. (p. 242)

Graves and Selig (1986) emphasize the importance of the medical library’s role in developing lifelong learning skills in medical students. They point out that “students need to develop skills in information management and in the use of information tools and databases” (p. 126), and they cite two reports that recommend that librarians devise these educational programs for medical students in cooperation with other health care educators and faculty.

Undergraduate students often do not comprehend the necessity of learning to use the library resources available to them, nor do they always realize that research skills will be a necessary part of their future practice of occupational therapy. This shortsightedness underscores the need for cooperation between faculty members and librarians, as Gwinn (1978) pointed out:

Success [in teaching research skills to undergraduates] is likely only if library instruction can be interwoven with the regular teaching programs. Most students will use library materials in their courses only if professors require them to. Consequently, librarians have been seeking ways to involve the faculty in innovative joint programs. (p. 19)

This method of library education for college students is known as course-integrated instruction. Allegri (1985–1986) said that this type of instruction must satisfy at least three of the following four criteria:

1. Faculty outside the library are involved in the design, execution and evaluation of the program.
2. The instruction is curriculum-based, in other words,
In the American Journal of Occupational Therapy, students in information-gathering techniques and recognize the necessity of educating their undergraduate library skills. This is implied by four of the division's members of the Occupational Therapy Division recognizing the need for library education.

At Ohio State University (OSU), the faculty members of the Occupational Therapy Division recognize the necessity of educating their undergraduate students in information-gathering techniques and library skills. This is implied by four of the division's objectives:

1. **Objective 3**: Graduate will describe the historical development of occupational therapy practice.
2. **Objective 4**: Graduate will describe and apply competing theoretical constructs as the first requirement toward practice of occupational therapy.
3. **Objective 9**: Graduate will identify differences among historical, philosophical, descriptive, theoretical, and empirical research approaches as a basis for accepting or rejecting hypotheses about dysfunction and alternative approaches to therapeutic mediation.
4. **Objective 11**: Graduate will study, analyze, and respond to the social and political nature of the public's reactions to health care.

**OSU's Library Instruction Program**

At OSU, library education begins long before undergraduates are accepted into the occupational therapy program. The University Survey course, which is mandatory for every freshman and transfer student, orient students to the university's facilities, rules, regulations, and services. This course devotes one session to a lecture by visiting librarians. During the lecture, the librarian-instructors share essential information about the library system and discuss the basics of using a search strategy to find information in the library. This strategy follows a general-to-specific approach:

- **Objective 3**: Students identify the topic to be researched;
- **Objective 4**: Students find general information about the topic in encyclopedias and reference books;
- **Objective 9**: Students search the Library Control System (LCS), search the OSU libraries' computerized catalog, for more books on the subject; and
- **Objective 11**: Students search the periodical indexes for journal articles. Students are also encouraged to consult reference librarians whenever they encounter problems in finding information.

After the lecture, the students are given a library exercise that requires them to use the resources introduced during the lecture to find information about a topic of their choice. Students must complete this assignment to pass the course.

By the time occupational therapy students begin their junior year, it is assumed that most of them have been introduced to the methodology of library use through the University Survey course. Many of these students also will have used libraries for other class assignments. However, few will be acquainted with reference resources specific to the health sciences, and many of them may not have had occasion to use the OSU Health Sciences Library.

**Introduction to Using the Health Sciences Literature**

The Introduction to the Field of Occupational Therapy course is designed to address Occupational Therapy Division Objectives 3, 4, and 11 by including a description and examination of settings for and types of occupational therapy practice and an overview of the alternative theoretical constructs used in practice. The course presents various current issues, and students are required to develop a position paper on one of them. The students must search for information on the pros and cons of the selected issue and must cite literature to support the development of an argument for or against the issue. This introductory course also covers the history of the profession. Students are required to:

1. **Objective 3**: Find and read studies of this history in the literature.
2. **Objective 4**: Focus their study on a particular period, and
3. **Objective 11**: Report their findings in a class presentation. Both assignments require students to use library resources.

To assist students in conducting relevant information searches, one session of the introductory course is devoted to library instruction. The guest lecturer for this class is one of the librarians from the OSU Health Sciences Library, who acts as liaison to the School of Allied Medical Professions. The lecture focuses on information needs specific to occupational therapy students and emphasizes resources specific to the health sciences.

As in the University Survey course, the search strategy concept is used as the basis for the lecture. The librarian chooses a subject pertinent to occupational therapy and, using overhead transparencies, shows how to find information on that subject in encyclopedias and reference books. The use of the LCS to search for books on the topic is reviewed. 

**Index Medicus** and the *Cumulative Index to Nursing and Allied Health Literature* are introduced, and techniques for using them and ways to interpret citations to journal articles obtained from them are discussed. Finally, information about bibliographic databases is given. Students are taught when and how to request a database search. The use of the computer equivalents to *Index Medicus* (MEDLINE), *Psychological Abstracts* (PsycINFO), and the *Cumulative Index to Nursing and Allied Health Literature* are discussed, as is the use of the Educational Resources Information Clearinghouse (ERIC). All of these are valuable resources for researchers in the interdisciplinary field of occupational therapy.

After this lecture, students are given a tour of the Health Sciences Library so that they know where...
these resources are located. They are also reminded of the additional services (e.g., reference assistance, interlibrary loan, photocopying) available to help them obtain the information they need.

As a result of this instruction, there has been a marked reduction in students' complaints such as "There's nothing in the library on my topic" or "The person I talked to in the library didn't help me." Students who sought their instructor's assistance for their papers had clearly used the library and located materials; they were approaching their instructor because they needed assistance to sort through the information they had found.

Before library instruction was incorporated into this course, students, in preparation to writing papers, tended to use books and one or two articles found by using either the Index Medicus or the Reader's Guide to Periodical Literature. They also relied heavily on the opinions of therapists they had interviewed for another course assignment. After library instruction was introduced, however, the papers reflected greater support from the literature in discussing the pros and cons of an issue and in arguing a position; both the number and quality of sources in the students' reference lists improved. Students were also better able to (a) examine empirical support of a position on an issue in occupational therapy, (b) determine the soundness of that support, and (c) distinguish between the soundness of an author's findings and their personal like or dislike of the author's argument.

Improvements occurred not only in the quality of the students' papers, but also in their in-class discussions of issues. This was manifested in students' more frequent citing of evidence they had found in the literature to argue their points. In addition, students began to understand the option of altering one's own position on an issue after carefully weighing the evidence presented. This exercise of developing a position paper from a knowledge base acquired during library research markedly improved the students' abilities not only to sort through the literature but also to read it more critically. As a result of this learning experience, students also began to realize the importance of relying on their own abilities in studying current issues in the field of occupational therapy.

The 54 students who completed the introductory course in the fall of 1986 were asked to evaluate their use of and attitude toward the Health Sciences Library and the library instruction they had received. When asked which sources they had used to obtain information for their position papers, students named indexes and abstracts 48 times and journals 51 times. Bibliographies, books, dissertations, even the OSU Law Library, were also mentioned. Many students specified the titles of journals in which they had found articles appropriate to their needs. In addition to those titles directly pertinent to occupational therapy (e.g., the American Journal of Occupational Therapy and the Canadian Journal of Occupational Therapy), they also indicated the use of journals in general medicine, nursing, pharmacy, health care administration and marketing, health education, dentistry, optometry, physical therapy and rehabilitation, family medicine, and geriatrics. This information supports the course instructor's observation that the number and variety of resources used by the students increased after the lecture on specific library use.

The students were also asked about problems they had encountered while working on their position papers. Forty-four said that choosing and narrowing a topic for the paper had been the greatest difficulty; this suggests that the librarian-instructor should provide assistance with this process in the future. Thirteen students mentioned difficulty finding general background information and 14 had trouble finding appropriate subject headings. Students wrote in their other individual problems: "Making sure I had used the best sources," "finding something controversial," "finding information against a stance," "finding information on my contrary argument to back it up," and "finding the history of my topic."

The most useful library technique named by the students was "figuring out how to find and use sources on my own" (45 responses). This is a positive response since the underlying goal of course-integrated instruction is to facilitate the development of independent information-seeking and self-study skills in the students. Other useful aids mentioned were reference librarians (20 responses), the classroom library presentation (15 responses), and handouts produced by the library (12 responses). Several students wrote in comments indicating that friends or classmates had helped each other in the use of the library.

The students were asked questions that measured their attitudes toward the library instruction. On a scale of 1 (poor) to 5 (excellent), they were asked if (a) the library instruction was useful (average score: 3.44); (b) the material covered was relevant to their research (average score: 3.72); (c) the information presented was actually used during their research (average score: 3.39); (d) the handouts were useful (average score: 3.22); and (e) they felt self-sufficient in using the library materials (average score: 3.43).

The students were also asked to rate themselves on their status as library users before and after receiving the library instruction. The scale ranged from 1 (no use of the library) to 3 (used it to complete required assignments) to 5 (frequent user). The students' average perception of themselves as library users before the instruction was 3.02; after the instruction it was 3.93.
Several comments by individual students were instructive. Some mentioned that the library instruction would have been more helpful if it had been presented just before a particular assignment. This is a valid observation, making the proper timing of the lecture an additional objective for the classroom instructor and librarian. One positive comment by a student was, "I just had to follow it through myself, and once I dug in it was easier. The library staff was very helpful and put up with my simple questions. The assignment also helped because it forced me to use sources I would not normally use."

Advanced Library Instruction

The standards for an accredited education program for the occupational therapist, as set forth by the American Medical Association and the American Occupational Therapy Association (1983), call for research content that requires a "critique of studies related to occupational therapy" (p. 3). The research guidelines set forth by the American Occupational Therapy Foundation (1983) recommend that students become consumers of research and that the identification, retrieval, and critical analysis of research literature related to occupational therapy practice be included in the professional course work for occupational therapy students.

Although the faculty members of the OSU libraries make considerable efforts to ensure that every undergraduate student knows how to use the extensive library system, some occupational therapy students enter their senior year without confidence in their ability to systematically identify and retrieve information. In addition, many students are unaware of the knowledge that reference librarians possess and are willing to share.

To satisfy these professional and personal needs, the teaching of information-seeking skills at OSU continues beyond the Introduction to the Field of Occupational Therapy course. In their senior year, students are required to take Research Methods Used in Occupational Therapy Practice, which addresses the Occupational Therapy Division Objective 9.

During this course, students develop an awareness of the most recent and/or important studies in occupational therapy and of the literature in other health sciences. In this way, they learn to keep up on new discoveries, knowledge, and approaches being used in occupational therapy practice. Students receive a series of library assignments constructed to take them step-by-step through the process of (a) conducting a review of the research literature and (b) developing a proposal for a research project.

The health sciences librarian who is the liaison to the School of Allied Medical Professions gives two guest lectures during this course. In a lesson on advanced techniques of using indexes and abstracts, the students are helped to understand the mental processes involved in (a) selecting a topic; (b) deciding on appropriate key words, synonyms, and related terminology; and then (c) finding the corresponding subject headings in each of four reference tools—Index Medicus, the Cumulative Index to Nursing and Allied Health Literature, ERIC, and Psychological Abstracts. The use of citations obtained during a subject search of these indexes and abstracts is reviewed.

The second lecture gives a detailed introduction to computer databases and the principles of on-line searching. The students learn (a) about the differences between databases, their producers, and their vendors; (b) how a research paper is analyzed, made machine-readable, and retrieved during a database search; (c) of the existence of databases other than MEDLINE that can be of interest to occupational therapists; (d) the advantages and limitations of database searching; and (e) details on the OSU Health Sciences Library's services. Students also are told of user-friendly searching systems, such as BRS College, Grateful Med, and Paper Chase, which were developed especially to enable health professionals to search databases such as MEDLINE. In the future, students may want to use these resources through personal computers in their homes or offices. Finally, students are given information about the MEDLINE on CD-ROM search system available in the reference department of the Health Sciences Library, a system they may search themselves at no charge.

Such deliberate exposure to library use by (a) having a reference librarian present material to the class and (b) assigning specific exercises that demand the use of the library to retrieve information on a topic of the students' own choosing has dramatically improved the likelihood that the occupational therapy seniors will use the library effectively. Most of these students' literature reviews and research proposals reflect strong skills in identifying and retrieving research studies related to their professional interests. The ability to reach outside of the occupational therapy journals and into the research reports of other disciplines displays an active understanding and use of the search strategy approach.

In general, students' evaluations of the senior course reflect an increased confidence in their ability to use the library productively. Seventy-two open-ended evaluations of the course were received from the two course sections offered during 1987. An increase in the ability to use the library effectively was specifically mentioned in 40% of these written evaluations. Typical statements made by students included the following: "I finally realized how much a person can find out just by going to the library!" "I feel more
confident about my ability to use the library and, with a little more time and patience, retrieve information I never thought I could find.” “I learned some more about using the library retrieval system—some was review, other things were new about using it. The more I’ve used it, the easier it is to find what I’m looking for.” “I was forced to learn to use the LCS, which is something I never thought I’d do!”

The results of this specifically focused library instruction are reflected in the improved quality of students’ research papers. This confirms the value of course-integrated library instruction. Many programs could improve students’ research skills by including a librarian as a member of the educational team. This instruction clearly benefits occupational therapy students in their present studies. More importantly, it prepares them to take advantage of the health information explosion, a skill necessary for professional success both today and in the future.

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References


