

Library Instruction for Medical Students During a Curriculum Elective*

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ABSTRACT

The University of Minnesota Medical School has an innovative curriculum, called Didactic/Selective, which provides third- and fourth-year medical students with multidisciplinary and multispecialty courses. Within this framework, the Bio-Medical Library planned a course to teach the knowledge and skills necessary for library research and information management. It included (1) searching case-related topics in print indexes, (2) formulating and processing MEDLINE searches on BRS Colleague, (3) building a personal file with PC-File or Notebook, and (4) exploring various methods for current awareness. Students' evaluations were positive, with the majority indicating that they found the course interesting and the knowledge gained substantial.

IN A 1983 STUDY DaRosa, Mast, and others concluded that "groups of third- and fourth-year students and M.D. faculty members were found to have limited skills at accessing the appropriate library sources to answer patient management questions requiring a review of current literature" [1]. Additionally, they found that "students and physicians need additional formal training in how to research current literature methodically to solve patient management problems" [2].

Northrup, Moore-West, et al. determined that "information-search education should emphasize and demonstrate that different kinds of resources are useful for different kinds of information problems." In other words, such classes should help students distinguish between background information and specific subject or factual information, and between recent information and standard information [3]. According to Northrup, the personal library is usually the first source searched for information; in rural areas, it may be the only

source. Therefore, education in choosing a personal library "should be linked to information search training to emphasize techniques of organizing and using the personal library that result in efficient, effective use" [4].

Barondess states that future physicians will need information management skills to cope with the increasing volume and complexity of medical literature. He suggests that exposure to new computer techniques, including those for literature review, is necessary [5].

As library instruction has become more common in medical education, many methods have been tried. These include critical reading seminars [6]; self-instructional courses [7]; standard seminars [8]; slide packages [9]; computer-assisted instruction [10]; and course-integrated instruction [11]. There are many variations on these methods. Foreman and Mueller report on a quarter-long credit course [12]; Gondek and Romanos write about a program that offers an orientation tour, a post-orientation questionnaire, and a research skills session [13]; and Graves and Selig describe a sequential library instruction program that addresses special student needs for each year of medical school [14].

Library skills for medical students are not always taught by librarians, and instruction has been given at various times during medical school. As yet, there seems to be no consensus about the proper time or methods for such instruction.

BACKGROUND

A recent pilot course in library instruction for first-year medical students at the University of Minnesota (UM) was judged successful by both students and the medical and library faculty members [15]. Nevertheless, finding a place for library instruction in the medical school curriculum remains a problem because of what Carroad and

*Based on a paper presented May 1986, at the Eighty-sixth Annual Meeting of the Medical Library Association, Minneapolis, Minnesota.

McGregor call "competition with other curricular demands" [16]. A modification of the UM medical school junior-year curriculum provided an opportunity to design a library skills course for third- and fourth-year medical students as part of the Didactic/Selective curriculum. It was decided to model this minicourse after an existing quarter-long credit course. The minicourse would include instruction in literature research strategies, resources available for various information needs, information management, ways to keep current, and building and managing a personal library.

The Didactic/Selective curriculum was developed by a special medical school task force. One of its purposes was to provide a course for clinically related topics that had been eliminated from the second-year curriculum. A second purpose was to provide innovative courses for the third- and fourth-year students. The task force recommended that both the didactic and the selective courses be multidisciplinary and multispecialty. In the six-week Didactic/Selective curriculum, students were required to attend the didactic clinically related lectures during the morning and selective courses during the afternoon. Students received only one grade. Although the selective courses were graded pass/incomplete, an incomplete in a selective meant an incomplete for the total six weeks, so there was an incentive to fulfill class requirements.

The goal of the selective course Information Research Strategies was to teach the knowledge and skills necessary to conduct library research and to manage recorded information. In contrast with the didactic courses, all selectives were presented in nonlecture format. The medical school task force adjured the faculty to be mindful of "the limited tolerance of medical students for sitting through multiple lecture periods" [17]. The six ninety-minute class periods included discussion, audio-visuals, in-class exercises, search formulation, hands-on MEDLINE searching, and using micro-computers for file management.

COURSE CONTENT

Various teaching methods were used for the following classes:

1. Search Strategy; Information Sources.

During this first session, general search strategies focusing on journal literature were presented. A brief introduction to monographs and government publications was included. A slide/tape program was used to present a more clinically oriented search

strategy, and students discussed the print materials described in the audiovisual.

2. Information Sources.

This session focused on print indexes, with emphasis on *Index Medicus* and *Medical Subject Headings*, *Excerpta Medica*, *Current Contents*, and *Science Citation Index*. Working in pairs, the students conducted brief literature searches for journal articles related to an assigned case study.

3. Databases as an Information Source; MEDLINE Search Strategy.

After a discussion of databases, with emphasis on MEDLINE, the librarians demonstrated search strategy techniques. Students selected topics and, with help from the librarians, formulated searches using MeSH tools. They were encouraged to select topics of personal interest so they could begin a file of references and expand it as they continued their research. This file would become a part of their personal library.

4. MEDLINE Hands-On.

Groups of three students and one librarian ran the formulated searches on BRS Colleague, using an IBM-PC or Apple IIe micro-computer.

5. Personal File Management; PC-File or Notebook Hands-On.

After a brief discussion of manual and computer-based personal file management systems, an overview of PC-File or Notebook was presented. Each student was given a floppy disk on which to store the bibliography generated by the MEDLINE search. Students created a short personal file by entering their references on PC-File or Notebook, which had been mounted on the Bio-Medical Library Learning Resources Center Local Area Network. In addition, the students entered a personal file number for each citation (so they could later file reprints sequentially by number) and a descriptor field. They learned to search their file by using descriptors as well as author and title words.

6. Current Awareness; Building a Personal Collection.

The final session was devoted to current awareness and to building a personal library, with students examining a variety of sources for journals, monographs, government publications, audiotapes, reprints, and software. The class concluded with discussion and student evaluation.

Although a reading list was included with the class schedule and several books were placed on reserve, readings were encouraged rather than required. No homework assignments were given. The course was intended to be enjoyable and undemanding, in consideration of the heavy requirements made on students' time.

To pass the library course, students were required to find in the printed sources literature related to an assigned case study, to formulate and conduct a MEDLINE search, and to use PC-File or Notebook to store and search the references found during their manual and MEDLINE searches.

EVALUATION

Because the Didactic/Selective curriculum is relatively new, the Office of Curriculum Affairs is evaluating the total program. Individual instructors also were encouraged to evaluate their own courses. The librarians used the standard University of Minnesota Student Opinion Survey—a five-scale machine-graded instrument. To date, the evaluation results for the library course have been in the 3.64 to 5 range, with 5 being "exceptional." The only question that generally received a lower rating was "How would you rate your own ability, prior to the course, to deal with the subject matter of this course?" Written comments from the students reinforced the positive numerical evaluation and helped librarians who were planning subsequent classes. Several students recommended that the course be made longer, with more time on the computer, and more time devoted to MEDLINE and personal file management.

The library course always has been over-enrolled. Each time it has been offered, the Office of Curriculum Affairs has requested admittance of more than the limit of twelve students, and the students themselves have asked to be admitted after the class has been filled.

A number of factors have been identified as essential to the success of the course. First, support from the associate dean for medical school curriculum, Dr. Robert McCollister, was vital. He encouraged the planning, promotion, and presentation of the class. This was part of his long-standing support. In the past he has chaired the Bio-Medical Library Advisory Committee, invited librarians to speak at the Medical Education Forum, and assisted in writing a grant to develop library instruction. Second, support from the Bio-Medical Library staff was outstanding. Although two

librarians planned and presented the course, all participated in some manner, from covering the Reference Desk to assisting with the "hands-on" MEDLINE instruction and the storing and searching of students' personal files. Third, BRS was helpful in providing during peak hours a number of passwords for the students. Finally, the students were truly interested in learning. They had selected the class themselves, and they were able to focus on their own clinical interests in their MEDLINE search and to build a personal file of high-interest references.

REFLECTIONS

A number of questions remain unanswered. Is the quarter-long course better than the shorter Didactic/Selective period? Is it better to present library instruction to first- or second-year students, or to third-year students beginning their clinical rotations? Or should instruction be spread out over the four-year curriculum? What is the appropriate size for the class? Is the balance between manual and computer-based library research and information management appropriate? Can the library support such labor-intensive instruction? The Bio-Medical Library experience has been too short to resolve these questions. Continuing efforts in planning, presenting, and evaluating courses should begin to provide some answers.

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Received January 1987; accepted March 1987.