Educational services in health sciences libraries: a content analysis of the literature, 1987–1994

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The recent literature (1987–1994) describing educational services of health sciences librarians was analyzed for content. Variables examined included publication journal, country, type of article (description, review, or advocacy), target audience of education services, and subject of article. Articles that reported research results also were identified. Of 123 articles studied, 82.1% were descriptive, 14.6% advocacy, and 3.3% reviews. Library users were the primary target audience (85.1%), an increase over the percentage reported in an earlier study of the 1975–1986 literature. Librarians were the target audience in 12.8% of the articles, a decrease from the previous study's findings. There was an increase in educational offerings by academic libraries, which sponsored 83.2% of programs, while hospital libraries' sponsorship decreased to 5% of programs reported in the literature. The analysis identified a major need for research related to educational activities in health sciences libraries.

In 1987, Martha Jane K. Zachert examined the literature describing educational services in health sciences libraries [1]. At that time, educational services in health sciences libraries were in a period of rapid growth. It was an ideal point at which to stop and examine what was going on in these libraries.

Now that educational services can no longer be considered new or optional services—indeed, they are considered standard public service offerings in most health sciences libraries—a reexamination of educational or instructional activities seems warranted. The purposes of the study reported here were to examine current educational services in health sciences libraries as they are reported in the periodical literature, and to see if recommendations made by Zachert regarding where future efforts should be directed have been addressed. Specifically, Zachert identified needs related to marketing, evaluation, and administration of educational services offered by health sciences libraries. Zachert's methodology was used in the present study so that data could be compared and trends identified.

METHODOLOGY

An online search of the library and information science literature was conducted to retrieve citations of periodical articles published after 1986 that described educational or instructional activities in health sciences libraries. The search was conducted in October 1994, so the literature reviewed spans seven-and-a-half years (through June 1994). Library Literature, Library and Information Science Abstracts, ERIC, MEDLINE and HEALTH were searched. The search was defined broadly to retrieve articles with descriptors or title words related to education, instruction, or orientation in any health sciences environment. Duplicates were eliminated and a total of 123 citations were retrieved.

Articles were categorized into the same three broad categories used by Zachert: descriptions of existing services, reviews of historical trends or current status, and articles that advocate educational services as an increasingly significant role for libraries [2]. Any article describing a research project related to educational programs was identified in addition to being coded into the three Zachert categories. For this analysis, research articles were defined as any "inquiry which is carried out, at least in part, by a systematic method with the purpose of eliciting some new facts, concepts, or ideas" [3]. In addition to the presence or absence of research results, other variables included the target audience of the educational service, the type of institution in which it was carried out, coun-
try, type of journal in which the article was published, and subject of the article.

Data were gathered from the bibliographic citation and abstract whenever possible. If questions arose concerning the coding of any variable, the full document was examined. All coding was done by the author, thus avoiding any inconsistencies in rating.

RESULTS

Type of journal

Health sciences librarians overwhelmingly chose health sciences library journals in which to publish their articles on educational activities. Of the 123 articles examined, 89 (72.4%) were published in these specialized journals. The titles occurring most frequently were Bulletin of the Medical Library Association, Medical Reference Services Quarterly, and Health Libraries Review. Twenty-six articles (21.1%) were published in general library and information science journals and eight (6.5%) were published in non-library titles.

Country

While U.S. librarians wrote most of the articles published on educational activities in health sciences libraries with 100 articles (81.3%), a wide range of countries was represented. European librarians contributed 12 articles (9.8%), Canadian librarians contributed 4 articles (3.3%), Asian librarians contributed 3 articles (2.4%) and librarians from Australia, New Zealand, and Africa contributed 2 each (1.6%).

Type of article

As in the Zachert study, descriptive articles predominated, with a relatively even distribution over the study period. Table 1 shows the distribution of type of articles over time and also includes, for comparison, the totals from the 1975–1986 study. While the overall distribution among the three categories has not changed dramatically, it is apparent that as educational activities in health sciences libraries have increased, so has the incidence of description of such studies in the literature.

Almost 15% of articles were categorized as arguing for the importance of educational services in health sciences libraries (the advocacy articles), a slight decrease from the 19.5% found by Zachert. The articles in this category have changed in tone, however. While earlier articles (as described in Zachert’s paper) spoke to the need for increasing educational services, the newer articles tended to acknowledge the current priority placed on educational services and to reaffirm the importance of these services in health sciences libraries.

Discussion continues, however, regarding the changing role of education in various settings. For example, since 1992, six articles (4.9%) have discussed the importance of libraries and information services in problem-based learning (PBL) curricula. Specifically, these articles discussed educational units incorporated into PBL curricula and presented strong evidence of the increasingly important role of the library’s educational services in health sciences curricula.

The number of review articles has fallen off considerably, with none being published after 1990. This, too, may be related to the general acceptance of educational services as essential in health sciences libraries, with energy spent instead on providing the health sciences library community with examples of current undertakings rather than reviews of past activities.

Target audience

As in the Zachert study, library users are overwhelmingly the major audience for health sciences libraries’ educational programs (Table 2). In all cases, users were defined as health care providers or health sciences students. While users were the target audience of 70.9% of the descriptive articles in the earlier study, this percentage increased to 85.1% from 1987 to June 1994. The increased emphasis on programs for users may reflect the increased recognition in the health sciences of the role of information in providing quality health care.

The second most common audience group was health sciences librarians. Programs that provide continuing education (CE) opportunities for both in-house staff (seven articles, 6.9%) and librarians working in other institutions (six articles, 5.9%) were surprisingly well represented given the amount of time educational programs require and the increased emphasis

Table 1

<table>
<thead>
<tr>
<th>Year</th>
<th>Descriptive</th>
<th>Review</th>
<th>Advocacy</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>15</td>
<td>2</td>
<td>5</td>
<td>22</td>
</tr>
<tr>
<td>1988</td>
<td>12</td>
<td>0</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>1989</td>
<td>18</td>
<td>1</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>1990</td>
<td>12</td>
<td>1</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>1991</td>
<td>8</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>1992</td>
<td>17</td>
<td>0</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>1993</td>
<td>14</td>
<td>0</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>1994</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>101 (82.1%)</td>
<td>4 (3.3%)</td>
<td>18 (14.6%)</td>
<td>123</td>
</tr>
</tbody>
</table>

on user education. This commitment to continuing professional education speaks well for the responsibility taken by health sciences librarians not only for their own continued professional growth, but also for that of others. Additionally, health sciences librarians used CE programs to test alternative teaching techniques. Journal clubs (new to librarianship although a long-standing activity in medicine) and distance education are two examples of innovative techniques tested on librarians.

Educational programs for patients and library students were not as highly represented as in the earlier study. Three articles (3.0%) described educational services for patients and none described services for library science students, compared to Zachert's 5.8% and 4.7%, respectively. While there appears to be a moderate decrease in educational services for patients, the information needs of patients were addressed not only by the three articles identified, but also indirectly through patient or health education staff. For example, several articles that discussed educational programs for health educators were categorized as part of the user target audience group. These programs were designed to teach health educators how to manage and organize information related to patient education programs.

Similarly, while no article described a program directed toward library science students, this topic was not neglected in the literature. In the course of this study, numerous articles were encountered that discussed changes in the formal preparation of health sciences librarians and the potential role of practicing librarians in revised curricula, primarily through sponsoring interns or fieldwork students or serving as adjunct faculty for credit courses. These articles were not, however, included in this sample because they did not describe specific group educational activities.

### Institutional setting

There have been some slight shifts in the distribution of types of institutions sponsoring educational programs. The percentages of medical school libraries, professional school libraries, library associations, and cooperative sponsorships have increased slightly (Table 3), while sponsorship by hospital libraries, national libraries, and library and information science (LIS) schools has fallen. The modest increase in academic library sponsorship may be attributable to the increasing value placed on information retrieval skills in health sciences curricula, but the decline in hospital library sponsorship was surprising.

Several studies have been published recently quantifying the value of the hospital library in providing quality health care [4–5]. Hospital libraries are, however, more like other special libraries than are academic health sciences libraries, and therefore their service priorities are quite different. Both articles cited above describe extended information services in support of patient care and decision making. Teaching end-users how to retrieve their own information is, of course, within the scope of hospital library services. However, if providing the health care professional with the information directly strengthens the library's perceived role, then many hospital librarians understandably will opt for reducing user education and increasing direct service. While this is speculation, it may explain the decrease in reports of hospital user education programs.

### Subject

The many recent changes in the health sciences environment have presented health sciences librarians...
with numerous teaching opportunities [6]. The subjects of the articles examined in this study were identified in an effort to describe current areas of activity as well as to see if the recommendations made by Zachert [7] were addressed. The distribution of articles by subject is shown in Table 4.

The most popular subject was teaching techniques (twenty-three articles), followed by information retrieval (twenty-two articles), which included all articles describing various programs teaching MEDLINE. Eighteen articles described evaluation techniques, a subject which also was the most popular subject of the research articles (seven articles).

Of the advocacy articles, the role of bibliographic instruction and administrative aspects of educational services were each represented by six articles. Of all articles, the role of bibliographic instruction accounted for nineteen and administrative aspects accounted for thirteen articles. That the role of bibliographic instruction was a popular subject of advocacy articles is not surprising given the increasing number of educational services being offered. The attention to administrative aspects of offering educational programs may reflect the shrinking resources available for educational programs. These six articles discussed alternative organizational structures and cooperative intra-institutional programs, among other topics.

In 1987, Zachert identified three subject areas in which the literature describing educational services in health sciences exhibited large gaps: marketing, evaluation, and administration. While the data from the two studies are not directly comparable, these three broad areas are well represented in the literature of 1987–1994 (Table 4). Indeed, these three areas comprise 28.3% of the articles examined. In addition, several other articles touched on these broad areas. Specifically, articles that evaluated teaching techniques and needs assessment could be classified as focusing on planning.

Rankin [8] mentions one area not represented by the articles in this study: continuing medical education. While undergraduate medical education has been of particular interest to health sciences librarians of late (as evidenced by, for example, the six articles that discuss the library's role in PBL curricula), continuing medical education continues to be addressed only as a non-educational support area. Specifically, health sciences librarians assume that the services they provide, particularly information retrieval and management skills, support health professionals in their CE activities, but this support is informal and has not been quantified in terms of direct impact. Information-seeking behavior and file management have been and continue to be areas of relevance, but specific educational programs tied to formal CE activities have not been described. The specific programs described in the Rankin article were not published in the library and information science literature and were not sponsored by health sciences libraries. There appears to be a role for health sciences librarians in continuing medical education should they choose to fill it.

**Research**

The need for research concerning educational activities in health sciences libraries is not a new issue, but it is one that has yet to be addressed. In 1991, Zachert reiterated past concerns that rigorous research, particularly related to the instructional programs of non-academic special libraries, was needed [9]. In the present study, nineteen articles (15.5%) could be classified as research articles. Of these, the most frequent topic was evaluation of an educational program (seven articles). One article described a direct comparison of two teaching techniques. Other articles addressed a variety of topics.

The percentage of articles describing educational services research is considerably lower than the percentage of research articles on any topic identified in other studies of the library and information science literature. In the general health sciences LIS literature, articles describing research accounted for 29.8% of the samples and in the general library and information science literature, percentages ranged from 23.6% to 31% in various studies [10]. Education in general, and adult or professional education in particular, are disciplines in which evaluation and research techniques are well documented. It is therefore surprising that librarians undertaking educational programming are not systematically evaluating or investigating their techniques, methods, or approaches and subsequently publishing their findings in the literature. In 1991, Zachert noted that "reports of em-

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Subjects of articles describing, advocating or reviewing educational programs, 1987–1994*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>No. of articles (%) (n = 123)</td>
</tr>
<tr>
<td>Teaching techniques</td>
<td>23 (18.7)</td>
</tr>
<tr>
<td>Information retrieval (including MEDLINE)</td>
<td>22 (17.9)</td>
</tr>
<tr>
<td>Role of instructional/educational programs</td>
<td>19 (15.5)</td>
</tr>
<tr>
<td>Evaluation of educational programs†</td>
<td>18 (14.6)</td>
</tr>
<tr>
<td>Administration/planning of educational programs†</td>
<td>13 (10.6)</td>
</tr>
<tr>
<td>Information technology</td>
<td>6 (4.9)</td>
</tr>
<tr>
<td>Needs assessment</td>
<td>6 (4.9)</td>
</tr>
<tr>
<td>Information technology</td>
<td>5 (4.1)</td>
</tr>
<tr>
<td>Marketing of educational program†</td>
<td>4 (3.3)</td>
</tr>
<tr>
<td>Organization of information</td>
<td>2 (1.6)</td>
</tr>
<tr>
<td>Other</td>
<td>5 (4.1)</td>
</tr>
</tbody>
</table>

† Areas identified in 1975–1986 as under-represented.
pirical or theoretical research are noticeably lacking” [11], and this is still the case.

CONCLUSIONS

Educational activities in health sciences libraries have continued to grow since Zachert’s first examination of the literature describing these programs. Academic health sciences libraries continue to be the primary providers of educational programs and library users continue to be the primary target audience. In fact, these two categories have become even more dominant than they were before.

Research is needed to examine the educational activities of health sciences librarians. While the need for research has been identified in other areas of health sciences librarianship, it is particularly important in the educational arena. Techniques and methodologies are available but, as Zachert pointed out, some research is beyond the resources available to practicing librarians. Time and money are scarce. What is needed is cooperation between library faculty and practicing librarians, whereby practitioners might contribute ideas (or hypotheses) and those with the professional impetus to undertake extensive research (i.e., faculty and doctoral students) would conduct the research.

The role of group educational programs in medical schools, in particular, has changed as alternatives to traditional medical education are tested. Health sciences librarians have taken advantage of this paradigm shift to assume an expanded role in undergraduate medical education.

Major technological changes have contributed to increased educational programming. Information retrieval, information management, and techniques of teaching any subject have changed, and librarians have responded by offering programs that either utilize the new technology or teach their users how to utilize it.

Finally, bibliographic instruction no longer can be seen as anything but a standard service, at least in an academic setting. Different priorities of small, clinically oriented libraries in noneducational settings may have led to a decrease of educational offerings in hospitals. But in any setting, a closer and more systematic examination is needed.

REFERENCES

2. Ibid., 234.
7. ZACHERT, op. cit., 237.
11. ZACHERT, Reflections, 84.

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