



## Use of Academic Libraries by High School Students: Implications for Research

This article presents a comprehensive review of the literature concerning use of academic libraries by high school students. Three types of literature are identified: (1) descriptive articles delineating either the problems or benefits related to the use of academic libraries by high school students; (2) research studies examining particular aspects of high school students' use of academic libraries; and (3) questionnaire data referring to secondary school students' use of academic libraries. Problems associated with the literature are discussed from the following perspectives: (1) application of results; (2) methods employed in various studies; (3) aspects of student use; and (4) contribution of the literature toward the development of a body of knowledge regarding the use of academic libraries by high school students. Emphasis is also placed upon neglected aspects in the literature such as (1) the absence of studies concerning the impact of technology on high school students' information-seeking behavior; (2) the potential for student use of multitype networks; and (3) the need for articulated bibliographic instruction programs for students in the use of all types of libraries.

Kathleen W. Craver

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Kathleen W. Craver is Head Librarian at the National Cathedral School, Washington, D.C. Submitted for review January 6, 1987; revised and accepted for publication March 31, 1987.

### INTRODUCTION

Within the past five years several critical national studies, such as the Boyer and College Board reports, have been issued concerning the quality of the high school curriculum.<sup>1</sup> Most have neglected to mention the direct role that the school library should play in improving the current structure of secondary education. All, however, have recommended the introduction of various programs and services, which by definition would require the expanded use of the school library and the availability of academic libraries to students. If high school students are to cope

successfully with the curricular changes recommended by these reports, it becomes essential that both academic and school librarians be cognizant of (1) the extent of academic library use by high school students, as revealed in the literature, and (2) the implications of this research for future library programs and services.

### PURPOSE OF STUDY

The purpose of this article is to review comprehensively the literature concerning the use of academic libraries by high school students. Three types of literature have been identified: (1) descriptive articles de-

lineating either the problems or benefits related to the use of academic libraries by high school students; (2) studies examining the use of academic libraries by secondary school students that emphasize only a particular facet of use; and (3) research and descriptive articles discussing student use of information that obliquely refer to secondary school students' use of academic libraries via analysis of a specific item in a questionnaire. The problems associated with the literature are discussed from the following perspectives: (1) application of results; (2) methods used in conducting research; (3) aspects of student use of academic libraries; and (4) contribution of the literature toward the development of a body of knowledge in this area. Emphasis has also been placed upon neglected aspects of the literature such as (1) the absence of studies regarding the impact of technology on high school students' information-seeking behavior; (2) the potential for use of multitype networks by high school students; and (3) the need for articulated bibliographic instruction regarding the use of various types of libraries.

**DESCRIPTIVE LITERATURE  
RELATING TO THE USE OF  
ACADEMIC LIBRARIES BY  
HIGH SCHOOL STUDENTS**  
*Academic Library/School Library  
Cooperation: Problems and Benefits*

**Problems.** Problems associated with academic and school library cooperation have roots in both institutions. Academic libraries tend to be quite selective regarding their clientele. They usually receive their funding according to some type of budgetary plan that accounts for the numbers of students, classes taught, and faculty members and the type of research being published.<sup>2</sup> Their cooperation, therefore, has always been somewhat dependent upon the degree to which they wish to garner the goodwill and support of the community and adhere to high ethical library standards of cooperation among all types of libraries.<sup>3</sup> School librarians, on the other hand, while sharing a similar type of budgetary formula, do not have a selective clientele, either in terms of numbers or ability; nor do they possess any degree of

control pertaining to changes in the curriculum.

These factors have always been considered important to academic library/school library cooperative arrangements. It was the 1960s period, however, that produced further scrutiny of these issues and generated pro and con articles in the literature. The "postwar school population explosion and assignments of more difficult problems in greater variety than ever before"<sup>4</sup> had an impact upon previously established balances between academic and school libraries. Education had imposed curriculum changes that required student access to a broader spectrum of library materials before government funds were granted to increase school library collections.<sup>5</sup>

The changes in the secondary school curriculum coupled with the increase in population among this age group served as catalysts for academic librarians to reexamine their role in providing library materials and services to the community. The articles pertaining to this topic, which were generated as a result of these changes, assist in placing academic and school library cooperation within a historical perspective. They also delineate problems involved with this type of cooperation that are still issues today.

In 1962 Craig and Perrine conducted a survey of 500 high school students using the academic libraries of four universities in the Houston, Texas, area because of reported problems with (1) high school students' potential for outnumbering college students in already overcrowded reading rooms; (2) students' unfamiliarity with the procedures of a college/university library; (3) students' need for extra assistance during times when fewer staff were on duty; (4) students' lack of respect for library materials; and (5) students' lack of scholarly purpose for frequenting these types of libraries. The results indicated a definite need by high school students for use of academic libraries. More than one-third of them noted that the school library lacked appropriate resources for completion of their assignments. Others stated that the school library was inaccessible during the evenings and on weekends and was located farther than academic libraries.

The Craig and Perrine survey outlined

general characteristics, requirements, and capabilities of the high school student who used academic libraries, and it simultaneously apprised practicing librarians of a number of problems associated with this group. With the exception of the University of Houston, which imposed a referral system via the school librarian, the remaining three academic libraries in the survey sample chose to live with the problems and opportunities caused by high school student usage.<sup>5</sup>

In 1963 the American Library Association held a conference concerning student use of libraries. A survey of academic libraries in twenty-three cities reported that student use was not a problem in Boston, Denver, Knoxville, Miami, Newark, and Racine college and university libraries. Of those institutions that did report a student-use problem, 20 percent cited high school students.<sup>7</sup> Their concerns were similar to those noted in the Craig and Perrine survey.

As the problem continued, the question began to revolve around the issue of borrowing privileges. Articles written about Beloit College Library (Wisconsin), Earlham College Library (Indiana), and the University of Puget Sound (Washington) describe the dilemma of academic libraries forced to choose between their obligation to serve their own tuition-paying clientele and their obligation to that segment of the community that also needed academic library materials.<sup>8</sup> In each of these libraries, a referral system via the school librarian was instituted, and borrowing privileges were not granted.

With school populations increasing during the 1960s, more school libraries were hard-pressed to maintain adequate collections. College and university libraries continued to experience the high school students' need for their services.<sup>9</sup> Librarians in all types of libraries began to realize that high school students were "not sensitive to jurisdictional boundaries between institutions if they can locate materials they need and that they will use every library in a community indiscriminately in their search for information."<sup>10</sup>

The student profile that emerges from these articles is that of a determined, highly motivated young adult willing to

travel a considerable distance to use academic library materials. With the exception of the Craig and Perrine survey, which attempted to approach the student-use problem from an objective point of view, many academic libraries in the 1960s reacted to overcrowding, misuse of borrowing privileges, and noise by instituting referral policies that limited access to high school students.

**Benefits.** The enumeration of problems in the use of academic libraries by high school students continued throughout the 1960s. Nonetheless, in some locations librarians were aware of the benefits to be derived from cooperation. Librarians in the school, public, and academic libraries of Gainesville, Florida, for example, established a hierarchic referral system to combat the problems caused by too many students. To fulfill the students' bibliographic needs, this system relied upon the resources of the school library first, followed by those of the public and academic library respectively. Librarians were responsible for verifying that materials were unavailable in their libraries before referring a student to a higher-level library. The establishment of this system gave each librarian an opportunity to limit the number of items to be checked out and to place high-demand materials on reserve. Although this system was not ideal for high school students, it still provided access to an academic library and paved the way for a more receptive librarian at the academic level.<sup>11</sup>

By the 1970s the student population explosion had abated, and articles describing the benefits from less-restricted forms of cooperation were published. These programs were characterized by either one or several of the following types of cooperation: (1) academic and school librarians cooperating at the local level; (2) coordinated visits to academic libraries by high school students; (3) bibliographic instruction for high school students by academic librarians; (4) the availability of academic library programs and services for designated groups such as the academically talented or honors-course students.

COOPERATIVE ARRANGEMENTS BETWEEN ACADEMIC AND SCHOOL LIBRARIANS AT THE LO-

CAL LEVEL. Portland, Oregon, exemplified a multitype cooperative arrangement at the local level that had substantial benefits to high school students. The school library was open four evenings a week, and in exchange, University of Portland, Portland State University, and community college libraries were available to students after school and on weekends. The public library also assisted by opening several young people's rooms at branch libraries during the evenings.<sup>12</sup>

A similar form of local cooperation occurred in a college community near Portland. Pacific University, high school, and public libraries offered reciprocal borrowing privileges to all of their patrons. Children's literature students at the university borrowed materials from the public and school libraries. The high school library was open on a daily basis throughout the summer. All librarians exchanged acquisitions lists and coordinated collection building in certain subjects. The advantages of this form of cooperation to high school students, as well as to the community, were significant. Students who required the use of advanced materials had unrestricted access to them. Academic librarians profited from the unrestricted access to children's literature and educational materials.<sup>13</sup> Cooperation of this type was no longer one-dimensional.

A more directed type of cooperation was undertaken by the Chickasha Cooperative Bibliographic Instruction Project (Oklahoma) in 1981. A team of librarians representing the public, high school, and academic libraries in Chickasha delivered a variety of bibliographic instruction programs to students and community groups that were designed to acquaint them with the resources available from each of these libraries.<sup>14</sup>

The three previous cases describe cooperation within the United States at the local level. An article published in 1984 related the success of a consolidated college/school library in Scotland. As the result of an acute lack of space in the college, its library collections were merged with those in the school library. Neither librarian reported any problems in their clientele's access to appropriate library materials.<sup>15</sup> While this Scottish experiment was precipitated by economic necessity, its

success helped to diminish some of the preconceptions academic librarians may have concerning the disparity in ages and abilities. In this instance, the combined school/college library proved beneficial to both user groups.

**COORDINATED VISITS BY HIGH SCHOOL STUDENTS TO ACADEMIC LIBRARIES.** Although several cooperative arrangements discussed in this section also encourage visits to academic libraries by high school students, SUNY-Albany (New York) has instituted a formal policy that coordinates high school students' visits with course-related bibliographic instruction. Students begin by viewing a slide tape that orients them to the academic library, followed by bibliographic instruction on accessing the library's holdings and specific instruction on course-related materials.<sup>16</sup> This type of cooperation not only encourages use of academic libraries for high school course assignments but also establishes important communication links between local teachers and academic librarians.

**BIBLIOGRAPHIC INSTRUCTION FOR HIGH SCHOOL STUDENTS BY ACADEMIC AND SCHOOL LIBRARIANS.** A third form of cooperation consists of bibliographic instruction programs for high school students by academic librarians. In 1977 the University of Vermont initiated a series of library skills workshops to acquaint 101 college-bound high school seniors with the resources available in an academic library. The student evaluations of the program were informative because they established that students had already used academic libraries despite the absence of formal cooperative agreements. More than half of the students reported previous use of the University of Vermont Library. Forty-four responded that they had used bibliographic materials from other academic and large public libraries in the state. Students also evaluated the program as a valuable learning experience.<sup>17</sup>

A similar type of program was reported in 1986 at Augustana College (Illinois). Included in the orientation program were library instruction guides and brochures that encouraged students to apply for admission to the college.<sup>18</sup>

In each of these projects, bibliographic



instruction was initiated and provided by academic librarians. In 1985 Washington State University librarians presented a session at a Washington Library Media Association conference entitled "Library Research Skills for College-Bound Students." In this project, teachers and school librarians were included in the planning stage. Working together, they designed course-related bibliographic instruction units that incorporated the proficiencies identified as necessary for successful research in an academic library.<sup>19</sup>

**AVAILABILITY OF ACADEMIC LIBRARY PROGRAMS AND SERVICES FOR DESIGNATED GROUPS.** The last form of cooperation concerns bibliographic instruction that results in borrowing privileges for designated groups such as academically talented or advanced placement students. In 1979 academic librarians at the University of South Carolina established a library enrichment program. The project continues to provide orientation and bibliographic instruction to twelve outstanding students from each secondary school in the surrounding area.<sup>20</sup> A similar type of program has been successful since 1982 at Winthrop College Library in South Carolina, which targeted its orientation and library-assignment sessions to students enrolled in advanced placement courses. Following completion of the program, students were granted borrowing privileges.<sup>21</sup>

#### **Characteristics and Objectives of Articles Describing the Problems and/or Benefits of Academic Library/School Library Cooperation**

Problems related to the use of academic libraries by high school students were caused by the student population explosion in the 1960s. The large numbers of students sorely taxed the ability of all types of libraries to deliver services to this segment of the population. The reaction of academic libraries to problems of overcrowding, increased demand for reference services, and so forth were understandable. Their solution to the problems was less comprehensible. The litany of concerns associated with high school students' use of academic libraries is characterized by a myopia. With the exception of several in the Houston, Texas, area, academic li-

braries instituted referral policies that limited access to high school students without obtaining any quantitative data concerning the pattern of misuse. Most librarians based their decisions solely on observations, which did not constitute an objective method for evaluating the problem.

Neither school nor academic libraries are experiencing a student-use problem at the present time. If it were to reoccur, it is hoped that academic and school librarians could study the problem with objectivity and negotiate a solution that would be amenable to both groups.

The articles describing the benefits of academic library/school library cooperation are characterized by a variety of model programs and services. On the whole, these articles are less narrow than the recitation of cooperative problems in the literature. Academic librarians describe projects that usually include students from several different high schools proximate to their libraries. In many instances programs have been conducted on the state level and did involve teachers and school and academic librarians.

In general, however, the literature reveals a unilateral approach to bibliographic instruction by academic librarians. It appears as if school librarians' teaching responsibilities ceased once their students entered the academic library for orientation and bibliographic instruction. Either by choice or request, school librarians appeared to abdicate their instructional role. The literature lacks articles describing bibliographic instruction programs cotaught by academic and school librarians.

Finally, both the problems and benefits of this form of cooperation are lacking sufficient quantitative data and analysis for other libraries' use as a basis for requesting funds to establish similar types of programs or to conduct further research.

#### **RESEARCH STUDIES CONCERNING ACADEMIC LIBRARY/SCHOOL LIBRARY COOPERATION**

There have been few research studies conducted regarding the use of academic libraries by secondary school students. Of the four discussed in this review, all can be characterized by the variety of their ap-

proaches to the subject. Several discuss the extent of academic library usage as an ancillary rather than as the salient topic.

The first study, Simpson's 1959 master's thesis, concerns ninth graders' use of the University of Utah Library. Employing an experimental research design, Simpson exposed a group of twenty-five above-average students to a series of ten college-level, library skills lectures and assignment sessions to determine whether academic library instruction affected the scholarship records of the students. Although college-level library instruction did not affect the students' scholarship records, evidence was found to suggest that (1) above-average students were capable of grasping a college course that was geared more to their mental ages than their chronological ages; (2) knowledge of library resources gained by ninth-grade students significantly exceeded the degree of understanding revealed by 1,300 college students who were given the same opportunity and had taken the same standardized test; and (3) advanced library instruction and use of university library materials provided a stimulating challenge and lent greater breadth and depth to the participating pupils' educational experience.<sup>22</sup>

The second study formed the basis for the 1966 meeting of the ACRL Ad Hoc Committee on Community Use of the Academic Library at the Annual American Library Association Conference. A survey of 783 academic libraries was designed to determine to what extent they (1) permitted usage inside or outside the building and (2) extended or declined to extend library privileges. Of the libraries responding to the question pertaining to permission for high school student usage, 258 said no, 189 answered with an unqualified yes, and 172 with a qualified yes. The last response indicated a host of preconditions such as (1) upperclass or honors students only; (2) advanced students in special courses; (3) limited quantity of students (ten per month); and (4) Saturday or summer use only. The response to this population by the survey participants indicated "a substantial distaste for service to this group."<sup>23</sup> Additional historical research revealed no further meetings of this ACRL committee concerning the student-use problem.<sup>24</sup> It is interesting to note, how-

ever, that the ACRL survey was conducted in the midsixties, when the sheer numbers of students created pressure on all types of libraries to provide assistance and materials. The disinclination of academic libraries to serve high school students at that particular time is perhaps more understandable.

The third study in this review was accomplished many years after the student population explosion. In 1981 Duhrsen designed a research project to examine the use of the New Mexico State University Library by students from Las Cruces. As justification for the study, Duhrsen conducted a telephone survey of fifty cities located in different areas of the United States; each city had a population of less than 100,000 and contained a doctoral degree-granting institution. The survey results indicated that more than 75 percent of the academic libraries were furnishing some form of library service to high school students and that no research had been performed regarding the use of these libraries by such students.

Duhrsen's research centered mainly on the relationship between academic achievement by 100 high school seniors and their use of the NMSU Library. His method consisted of a questionnaire and comparison of both groups' grade averages and scores on a Comprehensive Test of Basic Skills (CTBS). Analysis of the data revealed that users of the NMSU Library had higher GPAs than nonusers. Duhrsen concluded that the predominant users of the NMSU Library were likely to be (1) grade-oriented, (2) college-bound, and (3) not a member of a minority group. The implications of this research shed light upon the types of students most likely to use academic libraries and reinforced the concept that a high school student's educational aspirations, goals, and grade point average are important variables in determining potential usage for this age group.<sup>25</sup>

The last research study concerns needs assessment and LeClercq's proposed model for a cooperative arrangement between the University of Tennessee Library and area high schools. LeClercq's model was based upon the provision of library research and resources to college-bound high school students. The needs as-

assessment was performed by interviewing fifteen high school librarians and a group of teachers and by surveying eleventh- and twelfth-grade teachers. LeClercq's findings based on teacher perceptions revealed a definite need for further academic library/school library cooperation. Approximately 19 percent of the 324 surveyed teachers responded that collections met their students' research needs less than 25 percent of the time; 61 percent of them thought that students would make more use of academic books if they were provided with expanded access. Half of the faculty responded that they would change their types of assignments if students had access to a research collection.

The most important aspect of this study, however, concerned the students. Within one year of the program's initiation, 206 students from thirteen schools used the academic library and borrowed 1,113 books. Their research included projects in literature, the humanities, science, mathematics, and the social sciences.<sup>26</sup>

#### **Characteristics and Objectives of Research Concerning Academic Library/School Library Cooperation**

The few studies regarding the use of academic libraries were modest in scope. Each attempted to study a particular aspect of high school students' use of such libraries as it related to student achievement, teacher perceptions, or demands for services. With the exception of Simpson's master's thesis, all relied upon the use of a survey to obtain data necessary for reaching conclusions. No researcher attempted to provide a theoretical structure of high school students' information-seeking behavior, compared the results from one study with another, or accumulated the results in the literature to furnish a body of knowledge about use of academic libraries by high school students.

In reviewing the four studies, a picture of a small number of high school students who have the most potential for use of academic libraries emerges. These students are (1) college-bound, (2) grade-conscious, and (3) highly motivated. Research concerning this area has been prompted mainly by (1) the problems of overcrowding in academic libraries during the 1960s; (2) the inquisitiveness of a par-

ticular researcher; and (3) the recognition by one researcher that academic libraries may need to provide services to high school students in order to satisfy the recommendations of various reports concerning the status of secondary-school education in America.

#### **QUESTIONNAIRE REFERRALS TO USE OF ACADEMIC LIBRARIES BY HIGH SCHOOL STUDENTS**

The last type of literature refers in a rather oblique fashion to academic library/school library cooperation. It contains articles and research pertaining to student use of information and various library facilities. Since the researchers' methodology entailed the use of a questionnaire, an item analysis of pertinent questions occasionally reveals responses pertaining to the use of academic libraries by high school students. While these references to academic library use were not the primary focus of these articles or research, they assist in completing a literature review of an area in which little significant research has been published.

In 1967 Squire, Applebee, and Lucas published the results of a survey of 2,317 students in 158 high schools in forty-five states regarding use of the school library and/or other types of libraries. The findings revealed considerable student dissatisfaction with the school library and substantial borrowing of books from the public library, especially among seniors. In addition, 14 percent of advanced twelfth-grade students reported use of university and college libraries. Unfortunately, while Squire and his coauthors acknowledged the need for increased access to library materials, their recommendations emphasized necessary improvements to the collections of school libraries only rather than the necessity for cooperative arrangements with other types of libraries. These authors ignored the students' pattern of multiple library use.<sup>27</sup>

Two years later, Hannigan completed a doctoral dissertation that included in-depth interviews concerning the reading, viewing, and listening characteristics of 117 academically talented high school senior from twelve high schools in the metropolitan New York area. Approximately 39



percent indicated that they used academic libraries. The information concerning use of academic libraries was collected from students who could also have accessed large (i.e., New York Public) public libraries as well. The fact that academic libraries were also used by 39 percent of the group tends to support a pattern of multiple library use despite the availability of large public libraries.<sup>28</sup>

Although the previous studies were conducted during the 1960s, when all libraries were experiencing an influx of high school students, Benford's comprehensive 1971 survey on the use of various libraries by 10,000 students in Philadelphia reveals a similar pattern. There was a definite drop-off in the use of school libraries as students progressed to higher grade levels. Although 42 percent of all secondary school students continued to use both school and public libraries for materials, 13 percent obtained them from special libraries, homes, and bookstores. While Benford's reference to the term *special libraries* may or may not have included academic libraries, the pattern of multiple library use, especially by older students, is an important finding. Moreover, school libraries as evaluated in previous studies, lacked adequate collections, convenient hours, and services to support many students' educational needs.<sup>29</sup>

In 1976, Miller performed a perception study of 665 seniors enrolled in twenty-five southwestern Michigan public high schools to determine their attitudes toward the accessibility of the resources of their school libraries. In the first phase of the survey, two-thirds of the students identified themselves as nonusers of the school library. Interviews conducted with sixty students from twelve schools showed that all relied upon local public and academic libraries as major resources for information.<sup>30</sup>

Miller study reinforces previous research that documents the declining use of the school library with age and the increasing use of multiple library facilities. Gepfert's follow-up study of media specialists' perceptions in the same schools corroborated student statements in Miller's study concerning their use of multiple libraries; 32 percent of the twenty-five school librarians believed that students were accessing

materials from academic libraries.<sup>31</sup>

The most recent survey research relating to academic library use by high school students concerns two studies performed by Mancall and by Mancall and Drott. In addition to a questionnaire, both studies identified the types of materials used by high school students through citation analysis. The first study, conducted in 1977, was composed of 271 research papers and 234 questionnaires collected from college-bound students in six schools.<sup>32</sup> The second, conducted in 1979, increased the number of students to 1,198 and included those who were not college-bound in the sample population.<sup>33</sup>

The results of both studies revealed a pattern of multiple library use. It was found that an average student used three libraries to search for information. When these libraries were divided into types, 37 percent of the students in the first study reported using college/university libraries. In the second study, the use of academic libraries declined to 16 percent. Mancall and Drott imputed the low use to (1) lack of recommendations by teachers; (2) nature of the research assignment; (3) unfamiliarity with the classification scheme of the academic libraries; and (4) policies of academic libraries concerning use by high school students.

#### **Characteristics and Objectives of Questionnaire Referrals to the Use of Academic Libraries**

This type of literature is much broader in scope than in two previous kinds. Most studies were designed with diversified sample populations of a significant size to permit the drawing of certain conclusions. Unfortunately, their chief objective was not the study of academic library usage by high school students. Despite this lack of focus, it is apparent that without much guidance from school librarians or teachers, students have been functioning in a quasi-cooperative network. Their use of multiple libraries is a pattern that can be detected in all of the cited studies.

#### **LITERATURE PROBLEMS**

There are a number of problems inherent to this literature: (1) application of results; (2) methods used in various studies; (3) students' need for specific informa-

tion; (4) use of academic libraries by high school students; (5) differences between users and nonusers; and (6) general characteristics of user needs.

### **Applications of Results**

The application of the findings concerning use of academic libraries by high school students to networking and bibliographic instruction is of interest to most practicing librarians. Most of the studies, however, either neglect to mention these implications or concentrate on presenting suggestions that might increase the use of the school library instead of other libraries. In general, the results confirm that students have and are continuing to use academic libraries to complete various class assignments. Few librarians, however, have reported acting upon these findings. The need for school libraries to join multi-type networks to provide official access to academic and other types of libraries for their students has been largely ignored by many secondary schools. The need for school librarians to furnish instruction in the use of other types of libraries has also been a neglected area in the literature.

### **Methods Used in Various Studies**

Although several methods were employed to determine the use of academic libraries by high school students, use of the questionnaire and/or interview has predominated. This method(s) has validity when limited to an assessment of use of academic libraries by students who are acquainted with the bibliographical resources of a particular library. It is less reliable in the determination of actual use of academic libraries since surveys are based solely upon student perceptions of use. The majority of literature in this area uses the questionnaire inappropriately to infer actual use. With the exception of Mancall and Drott's studies, none has used bibliometric techniques as a means for measuring and evaluating high school student use of academic libraries. This method would have lent greater reliability and validity to these studies.

### **Use of Academic Libraries by High School Students**

Most of the literature has been concerned with establishing that high school

students use academic libraries to a certain extent. No studies have attempted to investigate what types of materials students need from academic libraries. This type of information would be helpful as justification for joining a multitype network or requesting funds to establish an informal cooperative agreement. Questionnaires and interviews are suitable for discerning students' general approach to information in academic libraries. This method is not as useful for ascertaining the specific information needs of students once they have gained access to these types of libraries. Studies of high school students' use of academic libraries will need to rely upon such methods as citation analysis, transaction logs, and participant observation to discern the need for government documents and reports, specialized periodicals, and monographs.

No research has been performed with respect to how students use academic libraries. Do they tend to request assistance immediately from an academic reference librarian? If they do, what are the effects upon librarians working at an academic reference desk? Do students make use of specialized indexes? Do they browse in a certain subject area for materials? Do they consult either an online or card catalog successfully? In general, how successful are they in their use of academic libraries? These and other questions have not been studied in sufficient depth. The information gleaned from such research would be valuable for both academic and school librarians when they design future bibliographic instruction units and plan for high school students' academic library visits.

### **Differences between Users and Nonusers of Academic Libraries**

A review of the literature indicates that most users are college-bound, grade-conscious, and highly motivated. There may be, however, other variables that affect use of academic libraries, such as (1) how far a student must travel; (2) nature of the course assignment; (3) teacher recommendations for use of other types of libraries; (4) policies of academic institutions toward use of their libraries; and (5) effect of previous bibliographic instruction. These variables have not been studied for the individual or cumulative effect

that they may have on high school students' use of academic libraries. Although the survey method would assist in evaluating the influence of these variables, experimental research and citation analysis of student course assignments would be more suitable for discovering which variables are most influential.

### Contribution of the Literature

One of the major problems of this literature is that the findings of these studies have been insufficient in both quantity and quality to permit the drawing of firm conclusions and the design and development of new programs and services involving the use of academic libraries by secondary-school students. The results of the studies undoubtedly increase our awareness that high school students have been and will continue to be users of academic libraries. They reveal a determination on the part of students to access academic library materials despite formidable institutional barriers. To accumulate the results of this literature and form a body of knowledge is difficult because of an absence of standardization in methods of assessment, data presentation, and analysis. Comparisons cannot be made between studies because they lack similar objectives and approaches. The subject warrants additional research in a variety of areas.

## IMPLICATIONS FOR RESEARCH

### Impact of Technology on the Use of Academic Libraries by High School Students

Student access to information outside the school library is in most cases difficult for school librarians to assess. Yet if they are to inculcate desirable information-seeking behaviors in their students, they must be cognizant of the influence that various other library facilities and advanced technology have upon them.<sup>35</sup> The introduction of computer and telecommunications technologies into libraries in the form of online catalogs and bibliographic searching has made it possible for users to obtain materials beyond the immediate, physical location of the library.<sup>36</sup> As a result of access to a union list of holdings, users of online systems have enhanced opportunities for bibliographic and physical access to materials.<sup>37</sup> In some libraries, dis-

tributed operations permit users to search for and request materials without having to retrieve the book from the shelf.<sup>38</sup>

The only comprehensive online catalog use studies that included high school students in the sample population were Markey's survey reports to the Council on Library Resources. The findings from both reports indicated that high school students may be predisposed toward the use of online catalogs because of their age and their search approaches to information. Volume 2 of the first report included high school students who were subsumed within a demographic category of users between ages fifteen and nineteen. Markey reported that the majority of users possessed favorable attitudes toward the online public access catalog for the following reasons: (1) using the computer was enjoyable and less tedious than using the traditional card catalog; and (2) the computer catalog saved time by allowing the searcher (a) to view another's search strategy, (b) to experience a faster response than flipping through catalog cards, (c) to remain in one location and search many different access points, (d) to access the library's catalog from remote locations, and (e) to obtain necessary circulation information. The second study, *The Process of Subject Searching in the Library Catalog*, found that a high percentage of secondary-school students depended upon elementary, general, brief topic descriptions that were suitable as subject access points when searching in an online catalog.<sup>39</sup>

Although it is evident that high school students are enthusiastic users of the online catalog and may bring a more fitting level of searching skills to it than was previously thought, more research is necessary concerning the effect that this form of technology has upon their use of academic library facilities and materials.

A second form of technology that may affect their use of academic libraries is online bibliographic searching. Several librarians, such as Wozny (1982); Craver (1985); and Kachel (1986), have described the successful teaching of online bibliographic searching skills to high school students. All noted that the students in their respective studies needed to use academic libraries either in person or through inter-library loan to retrieve the cited resources

listed in their database searches.<sup>40</sup>

The acquisition of online bibliographic searching skills by high school students and its possible impact upon the use of academic libraries merits further study. High school students will definitely need to use academic libraries either personally or via interlibrary loan to retrieve most of the materials cited in their search results. While the collections of school libraries will contain some of these references, the majority will have to be retrieved from academic libraries. High school students may also require additional assistance from academic reference librarians in interpreting the bibliographic records cited in their search results and locating these references. Research is needed regarding the impact that this form of technology has upon not only the use of academic library materials but also the services provided by academic reference librarians.

#### **Influence of Multitype Networking**

Researchers such as Strauss (1952); Martin (1963); Squire and others (1967); Benford (1971); and Miller (1976) have long been cognizant of the fact that high school students obtain library materials from a variety of sources and that their use of the school library tends to decline with age.<sup>41</sup> All of these studies, however, have analyzed use of public and home libraries as alternative sources. They have not delved deeply into use of academic libraries by high school students. The studies by Mancall and by Mancall and Drott described above confirmed this pattern of multiple library use and noted that a significant number of students used academic libraries in addition to school, public, and home libraries in that order. This use was demonstrated despite the absence of (1) on-site training, (2) a minimal amount of instruction concerning the use of various indexes, and (3) formal cooperative agreements between the schools and academic libraries.

For years school libraries have lagged behind their academic, public, and special library counterparts in their unwillingness or inability to become members of a network or cooperative arrangement that would make additional bibliographic materials directly available to students. In 1979 the National Commission on Li-

braries and Information Science recommended that school libraries should be engaged as full members of local, state, and national library networks. The report concluded that the lack of research regarding the success or failure of involvement hinders the development of present programs and dissuades others from beginning.<sup>42</sup> Although some school libraries participate as active members of such networks as Colorado Library Network, California Library Authority for Systems and Services, Washington Library Network, and Illinois Library Network, LeClercq, in a recent inquiry, found that school libraries were infrequent members and that their employment of a network equaled less than 10 percent of total use.<sup>43</sup> Among the reasons for failure of school libraries to participate actively in networks, the main one, LeClercq concluded, was the lack of access to bibliographic records representing the network's database of holdings.<sup>44</sup> At the present time, most school libraries involved in networking lack online terminals that permit students to search firsthand for materials in various types of libraries. Research is needed in this area to determine the effect of online access to a union list of holdings on the use of various libraries in a multitype network.

#### **Articulated Bibliographic Instruction Programs**

Most of the articles describing the benefits of academic library/school library cooperation are marked by an absence of articulated bibliographic instruction between these libraries. To remedy this situation, several national reports have recommended that academic and school librarians coordinate their efforts and collaborate on projects that result in effective, articulated, bibliographic instruction units.<sup>45</sup>

There are two objectives for a project of this nature: (1) "to ease the transition of the student from one educational unit to another and (2) to link the educational process into a lifelong learning continuum."<sup>46</sup> The rationale for articulated bibliographic instruction is a strong one; both institutions would benefit from this approach. Academic and school librarians need to formulate joint standards for library assignments, identify acceptable levels of library/research proficiencies, and decide at



which grade levels to introduce them. Although a number of cooperative projects have been described in this literature review, none has begun the research necessary to provide support, so that these efforts result in the benefits that their authors espouse. The majority are still relying on student evaluations concerning the value of the experience, and these are inappropriate measures for projects of this nature. A test of an articulated bibliographic instruction program will require the accumulation of hard data concerning such variables as (1) student performance on some type of standardized library skills test; (2) citation analysis of student assignments; and (3) assessment of the amount of remedial bibliographic instruction needed by students in a pre- and posttest research setting.

### CONCLUSIONS

The objectives of these studies have not been comprehensive. They have consisted mainly of simple, direct questions to students concerning their perceived use of academic libraries. This method, analysis of data, and application of results present few

problems in a study that is conducted at a local level. There are more than a few problems, however, when studies become extended and their results are applied to the overall body of knowledge concerning the use of academic libraries. Future projects will require more sophisticated techniques of measurement, not only to contribute to the accumulation of data but also to justify the expenditure of funds to further academic library/school library cooperation.

Although several of the studies provided insights into the type of student who is most likely to benefit from this cooperation, more research is needed to identify which variables, such as nature of class assignments, distance from an academic library, or recommendation of the teacher, are most influential in predicting student use of academic libraries.

On a broader level, school librarians especially must become aware of the effect that technology has on student use of information. They must seriously consider becoming members of library networks that offer the full range of services to their students. ■■

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