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ABSTRACT

A study was conducted to determine the relationship between use of the library and the classroom program at Kearney State College. After an extensive review of the literature on student library use, the library circulation slips for a seven and a half week period were collected. The declared academic major, academic class, sex, and grade point averages of full-time, undergraduate students using the library during that period were tabulated. It was found that a large percentage of the students made no use of the library, and only a small minority made appreciable use of the library. Students of certain academic disciplines tended to make heavier use of the library than others, but the use of the library had almost no influence on the semester grade point average of students. It was concluded that use of the college library is not a necessary part of the educational experience of most students at Kearney State College. (Author/PF)

STUDENT USE OF THE LIBRARY AT KEARNEY STATE COLLEGE

A Paper

Presented to

the Faculty of the Library School

University of Wisconsin-Madison

In Partial Fulfillment

of the Requirements for the Degree

Master of Library Science

by

Larry Lynn Hardesty

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Chapter 1

Introduction

Problem

That the library is the "heart of the college" is a phrase often heard and even repeated by academic librarians. Most librarians hold as basic the assumption that the library is an educational agency with a vital function in the educational process. Both Harkins[1], Swank[2], and others have traced the history of this idea through the numerous studies which have been undertaken with this assumption.

As early as 1888 Melvil Dewey wrote:

> The colleges ar waking to the fact that the work of every professor and every department is necessarily based on the library.[3]

In the fifty years after Dewey wrote this, academic libraries grew tremendously both in size and in use. In 1938, White observed that the number of volumes in fourteen university libraries had increased 181.9 per cent in the previous twenty-five years.[4] Based on such evidence, he proclaimed, "In the last half

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[1]Willard Dwight Harkin, "Analysis of Secondary School Library Media Programs in Relation to Academic Success of Ball State University Students in their Freshman and Sophomore Years." (Unpublished Ed. D. Dissertation), Ball State University, 1971, p. 21.

[2]Raynard C. Swank, "The Educational Function of the University Library," College and Research Libraries, I (July 1952), pp. 37-49.

[3]Melvil Dewey, "Libraries as Related to the Educational Work of the State," Library Notes, III (1888), pp. 333-348.

[4]Carl M. White, "Trends in the Use of University Libraries," School and Society, 48:669-677, November 26, 1938, p. 672.

century the library has become an adjunct--a very important adjunct--of the college".[5]

Along with the phenomenal growth of American higher education since World War II has come further concomitant development in the holdings, services, and importance of academic libraries. A huge amount of money and other resources has been directed towards this development with the assumption that it would result in a better education for the college student. With the volume count of even the smallest campus often running into the hundreds of thousands, it is no wonder that Knapp[6], Sutton[7], and others have found many college instructors and administrators referring to the library as "the heart of the college."

However, since the early 1930's several studies have shown that the library's role in education may not be as important as many librarians and educators have assumed it to be. While these studies will be discussed in more detail later in this paper, it is important to note here the general trend of their conclusions. The work of two individuals are particularly important in this regard:

In 1940, Harvie Branscomb reported the findings of a study of the library impact on American higher education. In his book, Teaching With Books, he discussed the results of several studies completed during the 1930's. He found that "the mass of undergraduates make very little use of the main book collection."[8]

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[5]Carl M. White, "Is the Relation of the College Library to the College Program that of Implement of Adjunct?", Educational Record, 20 (January 1939), p. 69.

[6]Patricia B. Knapp, "Suggested Program of a College Instruction in the Use of the Library," Library Quarterly, XXVI (July 1956), pp. 224-231.

[7]H. L. Sutton, "Is the Library the Heart of the College?", Saturday Review, XLU (April 21, 1962), pp. 62-63.

[8]Harvie Branscomb, Teaching With Books, (Chicago: Association of American Colleges), 1940.

He found that the students who did not use the library were not the misfits or dropouts, but they did almost equally as well as the library users. Branscomb concluded, "That in spite of all its growth the library has not been fully integrated into the major program of the college."[9]

Over a decade later Patricia Knapp completed an indepth study of the library's role in education at Knox College in Galesburg, Illinois. In reaffirming the results of Branscomb's study, Knapp introduced the concept of the library-dependent course. "The course rather than the student is the factor which determines the contribution of the library to the college program," she asserted.[10] As a corallory to this idea, Knapp believed "The evidence shows that the library's promotion of noncourse reading is largely ineffective."[11] Most significantly, she found that less than one-tenth of the courses were "dependent" on the library's general collection.[12]

These two studies are landmarks in the investigation of the educational role of the academic library. An abundance of journal articles, books, and unpublished dissertations, done both before and since these studies, generally agree with their findings. This should have major implications for the academic librarian, and encourage librarians to study their role of their library in relation to the academic community it serves.

Rationale

The services of the academic library, with respect both to initial

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[9]Branscomb, p. 37.

[10]Patricia B. Knapp, College Teaching and the College Library, (Chicago: American Library Association, 1959), p. 29.

[11]Knapp, p. 95. [12]Knapp, p. 93.

capital outlay and continued operating costs, are expensive. Over thirty years Branscomb stated the problem of college libraries as:

> ...that of securing a sufficient use of these enlarged resources to justify the investment that has been and is being put into them.[13]

More recently Hostrop has observed:

> The expenditure of large sums of money on library plant, equipment, materials, and services can command continued public support only so long as the college library is being used for the purpose for which it was designed.[14]

Waples, in his study for the North Central Accredition Association during the 1930's, attempted to define the purpose of the college library. He wrote:

> The educational values of a college library, ...are limited to such of the institution's objectives as students may obtain through reading materials secured from the college library. The library can be held strictly accountable for only contributions to the educational program that fall with in these limits.[15]

Waples believed the functions of the college library should be defined entirely by the educational programs of institutions it serves.[16]

Branscomb also believed the college library drew its objectives from the objectives of the institution it serves. He wrote:

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[13]Branscomb, op. cit., p. 4.

[14]Richard Winfred Hostrop, "The Relationship of Academic Success and Selected Other Factors to Student Use of Library Materials at College of the Desert," (Unpublished Ed. D. Dissertation), University of California, Los Angeles, 1966, p. 1.

[15]Douglas Waples, Leon Carnovsky, E. W. McPlarmidt, Lloyd W. Rowland and Edward A. Wright, The Library, (Chicago: The University of Chicago Press, 1936), Evaluation of Higher Institutions, Vol. IV, p. 40.

[16]Waples, Carnovsky, McPlarmidt, Rowland, and Wright, p. 1.

> The college library is thus not an end in itself. In this respect it differs from the national libraries and from the research libraries which, in part at least, in their endeavors to preserve knowledge in great book collections are ends in themselve. The college library has the same raison d'etre as the college of which it is a part, it exists for the sake of teaching or educating undergraduate students.[17]

For this reason Branscomb viewed the fu ı the college library as to forward, rather than to originate the educational program of the college.[18]

Several investigators indicated that an evaluation of the college library must be made in relation to the objectives of the institution it serves. There is a need to know, according to Waples, "What appropriately selected reading may be expected to contribute to the mastery of a given field by students of different scholarship levels."[19] The data is incomplete as to the present contribution of the library, and it is in this area librarians should direct their investigations.

The librarian is the suitable choice to do this type of investigation. As Shera has written:

> It seems not too much to ask that the librarian know and understand why people use books (recorded information), how they use books for whatever purpose, and the ways in which this use of books influences the behavior of both the individual and of society. How else can we acquire materials and organize them effectively if we remain ignorant of the precise uses of graphic records and the social consequences of such uses?[20]

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[17]Branscomb, op. cit., p. 81.

[18]Branscomb, p. 82.

[19]Waples, op. cit., p. 78.

[20]Library-Instruction Integration on the College Level, Report of the 40th Conference of Eastern College Librarians, held at Columbia University, November 27, 1954, ACRL Monographs, No. 13, (Chicago: Association of College and Reference Libraries, 1955), p. 10.

The librarian should take the lead in investigating the ties between the classroom and the library so the library's services might become wholly integrated with the educational program of the college. With such knowledge, according to Carnovsky:

> The library thus becomes not merely the passive agency for carrying out the wishes of the academic departments but an active force in presenting quantitatively the results of instruction, at least in so far as they may be measured by library use.[21]

The question is how should such an investigation be done. In a recent study of library management by Hamburg, he found in analyzing the recorded objectives of libraries, the objectives were not sufficiently explicit to be of direct assistance to management in planning and decision making for libraries. He determined that further analysis was required to develop an objective which is explicit and measurable in order to evaluate library performance. Moving from the objectives of the institution, Hamburg focused on what he considered the most important aspect of all public and university objectives: exposure of individuals to documents of recorded human experience. His assumption was that the basic objective of libraries is to maximize exposure to documents.[22]

Hamburg formulated a method of measuring library performance based on document exposure. He noted that two assumptions are implied in using this type of measure:

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[21]Leon Carnovsky, "The Dormitory Library: An Experiment in Stimiulating Reading," Library Quarterly, (3-(1): 37-65, January, 1933), p. 65.

[22]Morris Hamburg and others, Library Planning and Decision-Making Systems, Cambridge, Massachusetts, (The MLT Press, 1974), p. 4.

1. Exposure of an individual in the library population to any document obtained through the library does enhance his self-development, and, through this means of informal or formal education, yields a benefit to society.

2. The amount of societal benefit does not vary greatly from one individual-document exposure to another.[23]

This measure ignores other uses of the library, such as studying or reading of one's own material, for socializing, and for classes. Hamburg excluded such uses for two reasons: First, the exclusion is a matter of expediency. Second, he believed, "when the library is performing these additional services, it is not acting in its capacity as a library, which is to serve the social function of bringing together individuals and recorded information."[24]

While Hamburg established an elaborate library performance measure based on item-use-days, exposure counts, and exposure time, he has, in effect, established a rationale for using circulation records for evaluating library performance. While this method has limitations, which will be discussed later, it has a high degree of validity.

Often the academic library is described in terms of its physical facilities, size of its collection, or the amount of its budget. Important as these are to the library's effectiveness, such a listing, according to Lane, does not provide a measure of the library's effectiveness as an instrument of education.[25] Such measures are important only to the extent they "enlarge or restrict the nature, amount, and distribution of student reading,"[26] or in other words, the use of the library materials.

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[23]Hamburg, p. 23. [24]Hamburg, p. 17.

[25]Gorham Lane, "Assessing the Undergraduate Use of the University Library," College and Research Libraries, (July 1966), pp. 277-282.

[26]Waples, Carnovsky, McPlarmidt, Rowland, and Wright, op.city., p. 40.

To a large degree one of the best indications of use of the college library can be found by examining its circulation records. Waples believed, "They constitute probably the best single available index of the library's educational achievement."[27] But a full understanding of their limitations is necessary in order to obtain maximum benefit from their study.

Limitations

In the 1966 Library Statistics: A Handbook of Concepts, Definitions, and Terminology circulation statistics are recommended to be omitted for national reporting for the following reasons:

> Insofar as circulation figures represent library use, they fall short of their intent. Coupled with attendance figures or room count, they may be somewhat more significant. While it may be worthwhile for a library's internal operation ...it is not believed possible to derive nationally comparable data, owing to variations in loan periods, in "reserve" policies, and in centralized or decentralized operations.[28]

It is widely accepted that numerous variables exist that might influence the reliability of circulation statistics for comparing library use. It is interesting to note that in a related study Evans listed twenty-six factors that might influence the use of the library collection, but noted, "As of this time none of the factors listed has been shown to cause or to be correlated with a statistically significant change in the pattern of use."[29]

Several researchers have suggested limitations in using circulation records in comparing library use. Kulhman noted varying accessibility books

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[27]Waples, Carnovsky, McPlarmidt, Rowland, and Wright, p. 39

[28]American Library Association, Library Statistics: A Handbook of Concepts, Definitions, and Terminology, (Chicago, IL: American Library Association, 1966), p. 22

[29]Edward G. Evans, "Book Selection and Book Collection Usage in Academic Libraries," The Library Quarterly, 40 (July 1970) p. 297-308.

in open and closed stacks.[30] Steig reported circulation differences because of differences in the types of courses offered.[31] Student use of dormitory, fraternity, departmental and personal libraries were mentioned by Gaskill, Dunlar, and Brown in their study.[32] Waples, in his study, reported, "Even in small towns it appears that friends, public libraries, newsstands, bookstores, and special libraries are also used by students in the order named."[33] "Circulation figures have different meanings in practically every library in which they are recorded", concluded Branscomb.[34] Comparative circulation figures must be interpreted in each case with a full knowledge of the particular library's circumstances.

Even in comparative studies of libraries of similar circumstances or within the same library, use of circulation records have serious limitations. In using circulation records, one must assume, as Hamburg did, that all students read the same proportation of the books they borrow, and that they read them with the same degree of intentness.[35] Woods[36],

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[30]A. F. Kuhlman, "College and University Library Service: Trends, Standards, Appraisal, Problems," (Chicago: American Library Association, 1938), p. 42.

[31]Le is Steig, "Circulation Records and the Study of College-Library of the Use of a College Library," (12: 94-108, January, 1942), p. 106.

[32]H. V. Gaskill, R. M. Dunbar, and C. H. Brown, "An Analytical Study of the Use of a College Library," Library Quarterly, 4 (October 1934), p. 564.

[33]Douglas Waples, Leon Carnovsky, E. W. McPlarmidt, Lloyd W. Rowland and Edward A. Wright, The Library, (Chicago: The University of Chicago Press, 1936), Evaluation of Higher Institutions, Vol. IV, p. 39.

[34]Harvie Branscomb, Teaching With Books, (Chicago: Association of American Colleges), 1940, p. 15.

[35]William Edward Woods, "Factors Influencing Student Library Use: An Analysis of Studies," (1930-1964), M. A. University of Chicago, School of Library Services, 1965, p. 52.

[36]Ibid

Knapp[37], Hostrop[38], Carnovsky[39], McDiarmid[40] and Waples[41] agreed that this is a limitation. For example, wrote Waples, "The library may at times do more to promote the educational program by supplying one serious student with a single important title than by supplying many students with extra-curricular reading."[42] Also, suggested McDiarmid, the student who signs for a book may not always be the student who reads it.[43] But according to Knapp[44] and Hostrop[45], short of questioning each student about every withdrawal, this limitation is inevitable. Even the results of questioning or reading diaries are subject to omissions and exaggerations.

A second limitation to using circulation statistics is that they do not include a number of important uses of the library. Branscomb noted that a student may use a book within the stacks, or make use of reference tools, periodicals, and newspapers without the use of being recorded.[46] More recently, Hamburg has added that a student may make photocopies of

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[37]Patricia B. Knapp, College Teaching and the College Library, (Chicago: American Library Association, 1959) p. 4.

[38]Richard Winfred Hostrop, "The Relationship of Academic Success and Selected other Factors to Student Use of Library Materials at College of the Desert", (Unpublished Ed. D. Dissertation), University of California, Los Angeles, 1966, p. 20.

[39]Leon Carnovsky, "The Dormitory Library: An Experimental in Stimulating Reading," Library Quarterly, (3 (1): 37-65, January, 1963), p. 41.

[40]Errett Weir McDiarmid, Jr., Condition Affecting Use of College Library, (Unpublished Ph. D. Dissertation), University of Chicago, 1934, p. 6.

[41]Waples, Carnovsky, McPlarmidt, Rowland, and Wright, op. cit., p. 55.

[42]Ibid [43]McDiarmid, loc. cit. [44]Ibid [45]Hostrop, loc. cit.

[46]Harvie Branscomb, Teaching with Books, (Chicago: Association of American Colleges, 1940, p. 28.

materials for later use without circulation records indicating this use.[47]

Waples suggested three reasons for the failure to record reading within the library. First, such a record is unnecessary to insure the return of books. Second, the record is difficult and expensive to make. Finally, the record itself would do much to discourage the desired student reading.[48]

Several efforts have been made to account for such use of the library. Waples assumed such reading would likely be a small percentage of reading represented by free loans and reserved loans.[49] McGrath suggested:

> So-called "in-library" use, at least in an open stack library where users have a choice of taking books out or using them in the library may not constitute real use,.... Such "use" may actually be "to see whether I want to use the book," and therefore should not be equated with out-of-library use."[50]

He conceded, though, that to draw a severe distinction between the two types of use may be stretching the point.[51]

Other investigators attempted to find a relationship between in-library use and books charged out. Lubans found in his study little relationship between the two types of uses. He concluded, "It appears from

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[47]Morris Hamburg and others, "Library Planning and Decision-Making Systems," (Cambridge, Massachusetts: The MIT Press, 1974), p. 16.

[48]Douglas Waples, Leon Carnovsky, E. W. McPlarmidt, Lloyd W. Rowland and Edward A. Wright, The Library, (Chicago: The University of Chicago Press, 1936), Evaluation of Higher Institutions, Vol. IV. p. 43.

[49]Ibid

[50]William E. McGrath, "The Significance of Books Used According to Classified Profile of Academic Departments", College and Research Libraries, Vol. 33, No. 3, May 1972, p. 217-219.

[51]Ibid

this study that a user need not charge out books to be a frequent "user" of the library."[52]

McGrath, in his studies at the University of Southwest Louisiana, found a correlation coefficient of .86 between books used within library and those circulated when grouped according to classification spans relating to thirty-nine academic departments and .84 between books within the library and those circulated when grouped by 141 major LC and Dewey Decimal classification catagories.[53] He concluded:

> ...that circulation totals, when grouped into self-delineating spans, can be reliable indicators of the subjects being used within as well as out of the library.[54]

In a similar study Bommer used thirty-nine subject areas at the Lippincott Library of Pennsylvania. He found a correlation coefficient of .92. He established an almost linear relationship between circulation and in-library use, with almost one in-library use for each circulation.[55]

Other studies also found a positive relationship between the two types of uses. Fussler and Simon generally concluded, "Books that develop little recorded use develop little browsing, and books that develop much recorded use

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[52]John Lubans, Jr. and other, "A Study with Computer-Based Circulation Data of the Non-Use and Use of a Large Academic Library," Final Report, Colorado University, June 1973, (ERIC number ED 082-756).

[53]William E. McGrath, "Correlating the Subject of Books Taken out of and Books Used Within an Open-Stack Library," College and Research, July 1971, pp. 280-285.

[54]McGrath, p. 285.

[55]Michael Bommer, "The Development of a Management System for Effective Decision Making and Planning in a University Library," (Ph. D. Dissertation, University of Pennsylvania, Philadelphia, 1971), ERIC Clearinghouse, Library Information Sciences, Washington, D. C., (ERIC number ED 071-727), pp. 116-118.

develop much browsing."[56] They found this pattern to be somewhat distorted for the highest-used books, and the relationship may vary from three to nine times as much browsing as recorded use in open stacks, depending on the subject and regulations governing stack access.[57]

Galliher, Morse, and Bush in a study of the Science library at M.I.T., were able to develop a ratio between circulation rates and other activities of library use. They found roughly three in-library book consultations for each circulation. They suggested that these ratios (or similar one charateristic of any particular library) permit one to estimate the amount of other kinds of use of the library through tabulating circulation records and applying appropriate ratios.[58]

Lyle, in a one-day study through use of a questionnaire, found for every book taken outside the library, there were four library items used within the building. Generally he found the materials taken outside the library to be books, while the materials used within the library included the total library resources, such as books, records, newspapers, and periodicals.[59] Excluding non-book items, his results may have been closer to the results of McGrath's and Bommer's studies.

Knapp found through use of a questionnaire spot-check that students who

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[56]Herman H. Fussler and Julian L. Simon, "Patterns in the Use of Books in Large Research Libraries," (Chicago: The University of Chicago Press, The University of Chicago Studies in Library Science, 1969), p. 115.

[57]Ibid

[58]Bush, Galliher, Morse, et. al., "Attendance and Use of the Science Library at MIT," American Documentation, (7: 87-109, April 1956) p. 92.

[59]Guy R. Lyle, The President, The Professor, and The College Library, (New York: The H. W. Wilson Company, 1963) p. 52.

use materials in the library are well represented in circulation records. She concluded that circulation was a reasonably valid indicator of the pattern of library use.[60] Kilgour, in studying recorded use of books in the Yale Medical Library, seemed to agree with McGrath evaluation of in-library use of books. He believed, while circulation records may not precisely reflect total use of the library's collection, "volumes lent largely experience productive use. for the borrowers know that the volumes will be useful when they charge them out."[61] Hostrop also assumed that circulation statistics are a valid indicator of library use.[62]

Again, as with other aspects of circulation records, it appears difficult to make generalization that apply to all libraries. The general indication is that there exists a positive relationship between in-library use and circulation, but studies may be too few and too contradictory to assert a definite relationship.

There is also some disagreement among investigators concerning seasonal variations in the use that students make of the library. If a seasonal variation exists and a study is limited just to a high or low period, the study may be bias for predictive purpose unless the investigator is aware of such variations.

Carnovsky found a slight decrease in per capita circulation from the autumn to the winter and from the winter to the spring quarter in a study of

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[60]Patricia B. Knapp, College Teaching and the College Library, (Chicago: American Library Association, 1959), p. 4.

[61]F. G. Kilgour, "Recorded Use of Books in the Yale Medical Library," American Documentation, 12 (October 1961), pp. 266-269.

[62]Richard Winfred Hostrop, "The Relationship of Academic Success and Selected Other Factors to Student Use of Library Materials at College of the Desert," (Unpublished Ed. D. Dissertation, University of California at Los Angeles, 1966), p. 113.

reading in the men's dormitory at the University of Chicago.[63] Eurich also found a tendency for a greater circulation during the fall quarter, less during the winter quarter, and still less during the spring quarter.[64]

On the other hand, Branscomb found at an eastern University, "more than 50 per cent of the total reading fell in the second half of the semester."[65] Steig also discovered at Hamilton College students in all classes borrowed many more titles during the second semester than during the first.[66] Woods per capita reading increased in the spring semester in a seven-year study of Chicago Teachers College and Wilson Junior College, but total withdrawals were less in certain spring semesters.[67]

The results of these studies appear to be inconclusive and suggest that studies conducted for less than one academic year may be suspect. Steig discussed several remedies. He referred to a suggestion by Randall and Goodrich that a sample period cover at least thirty days, which should not be consecutive, but distributed over a three to four month period. He also referred to a similar suggestion by B. L. Johnson of Stephens College.[68]

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[63]Leon Carnovsky, "The Dormitory Library: An Experimental In Stimulating Reading," Library Quarterly, (3 (1): 37-65, January, 1933), p. 43.

[64]Alvin C. Eurich, "Student Use of The Library," Library Quarterly, III (1933), p. 422.

[65]Harvie Branscomb, Teaching With Books, (Chicago: Association of American Colleges, 1940, p. 22.

[66]Lewis Steig, "Circulation Records and the Study of College-Library Use," Library Quarterly, (12: 94-108), January 1942, p. 107.

[67]William Edward Woods, "Factors Influencing Student Library Use: An Analysis of Studies," (1930-1964) M.A. University of Chicago, School of Library Services, 1965, p. 47.

[68]Steig, op. cit., p. 98.

In an extensive discussion, Waples has proved fairly conclusively that the use and administration of reserve books vary to such a degree from one library to another that valid comparisons are practically impossible. Class size, number of books available, method of instruction are among the variables which render reserved loans unreliable as a basis of comparison, according to Waples.[69] Steig[70] and Branscomb[71] also accepted Waples conclusion.

In summary, use of circulation statistics has many limitations in measuring the library's role in the college program. It must be recognized that a completely controlled situation would be virtually impossible for such a study. Even, according to Woods, grade point average is not a highly scientific measure because grades are subjective and varies from instructor to instructor and from school to school. More difficult to measure are such variables as motivation which may affect a student's use of the library.[72] As a result, some room must be left for a margin of error from the effects of unrecognized factors which bias the results. The complete recording of all reading is probably not possible, but use of circulation statistics offers a valuable index of measurement, provided that proper consideration is given to its limitations.

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[69]Douglas Waples, Leon Carnovsky, E. W. McPlarmidt, Lloyd W. Rowland and Edward A Wright, The Library, (Chicago: The University of Chicago Press, 1936), Evaluation of Higher Institutions, Vol. IV, p. 43.

[70]Lewis Steig, "Circulation Records and the Study of College-Library Use," Library Quarterly, (12: 94-108, January, 1942), p. 96.

[71]Harvie Branscomb, Teaching With Books, (Chicago: Association of American Colleges, 1940) p. 17.

[72]William Edward Woods, "Factors Influencing Student Library Use: An Analysis of Studies," (1930-1964), M. A. University of Chicago, School of Library Services, 1965, p. 51.

Purpose of the Study

The purpose of this study is to examine, through use of circulation records, the relationship between individual academic libraries and the educational programs of institutions they serve. Knowledge gained from this examination is applied to investigation of the integration of use of the library on one college campus, Kearney State College, into the educational program of that institution. Particular emphasis is placed on student characteristics. Comparisons are made both with other institutions and with the various programs and departments within the institution. This is important in determining to library's role in this institution with relation to other libraries' role with their respective institutions, and, also, to determine relative strengths and weakness of this library's contribution to the education program of Kearney State College.

Chapter II

REVIEW OF RELATED RESEARCH AND LITERATURE

In this chapter a presentation is made of studies related to the present investigation which is designed to determine the relationship of the college library and classroom instruction through use of circulation records at Kearney State College.

Circulation Statistics

Since Eurich's study in 1930, there have been numerous studies of library use through use of circulation statistics. Woods, in an unpublished Master's paper,[73] discussed approximately twenty-five such studies, including Branscomb's and Knapp's. For many of the studies, student use of the library has been expressed in average per capita circulation.

To a degree, use of the mean or average alone is misleading. Most of the studies found many students who circulated no works, but this situation was often offset by a few students who circulated a large number of books. This situation tends to distort the mean, according to Steig, who found such criticism justified in his study at Hamilton College.[74]

In his early study at the University of Minnesota, Eurich attempted to keep track of the circulation of the general library for what he considered

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[73]William Edward Woods, "Factors Influencing Student Library Use: An Analysis of Studies," (1930-1964) M. A. University of Chicago, School of Library Services, 1965.

[74]Lewis Steig, "Circulation Records and the Study of College Library Use," Library Quarterly, (12: 94-108), January 1942, p. 99.

a "typical" week. This week consisted of the latter half of the tenth week and the first half of the eleventh week during the fall quarter 1930.[75] Branscomb calculated the average circulation from this study to be 11.8 volumes per student per academic year from the general collections and 34.4 volumes per student from the reserve collection.[76]

For three quarters, Carnovsky in 1931-32 recorded the circulation of books by 255 men in the University of Chicago's College Residence Halls for Men library. He calculated the mean per quarter to vary from 3.6 to 4.86 books per student. This equated to 12.76 books per student for the academic year.[77]

During the second semester of the 1932-33 school year, Waples undertook a major study for the Committee on the Revision of Standards of the Commission on Higher Institutions of the North Central Association of Colleges and Secondary Schools. Its purpose was to identify the particular features of college libraries which best indicated the relative excellence of their respective colleges.[78] For this purpose, Waples obtained data from thirty-five colleges in the North Central Association. He kept records of circulation for varying periods at these institutions, ranging from seventy to 110 days. Renewals were not calculated since Waples found they constituted so small a

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[75]Alvin C. Eurich, "Student Use of the Library," Library Quarterly, III (January 1933), p. 87.

[76]Harvie Branscomb, Teaching With Books, (Chicago: Association of American Colleges, 1940), p. 24.

[77]Leon Carnovsky, "The Dormitory Library: An Experiment in Stimulating Reading," Library Quarterly, (3 (1): 37-65, January, 1963), p. 42.

[78]Douglas Waples, Leon Carnovsky, E. W. McPlarmidt, Lloyd W. Rowland and Edward A. Wright, The Library, (Chicago: The University of Chicago Press, 1936), Evaluation of Higher Institutions, Vol. IV, p. 80.

proportion of the general circulation that they could be omitted without loss, and with considerable saving of labor.[79] He concluded:

> The mean number of titles borrowed per student for the thirty-five colleges is 5.55 titles, the institutional averages ranging from 1.80 to 16.35.[80]

Woods calculated the average per student per academic year to be 11.10.[81]

Of the thirty-five colleges in Waples' study, seven colleges recorded withdrawals of not only general collection books but also all reserved books. These two catagories of loans were kept separate and were studied by McDiarmid. Like Waples, he found seldom did students borrow a title more than once from the general collection during a term. Therefore, if renewals were not taken into account, the number of titles withdrawn is as valid a figure as the number of loans.[82]

The records did not include student use of reference volumes, magazines or sources of reading other than the college library. For the semester, McDiarmid found the variation among institutions to range from 7.92 to 19.49 for average number of reserved titles per student, circulated and from 3.04 to 10.93 general collection titles.[83] Woods calculated the average per capita general circulation for the 2,278 students involved to be 13.86 for the academic year.[84]

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[79]Douglas Waples, Leon Carnovsky, E. W. McPlarmidt, Lloyd W. Rowland and Edward A. Wright, The Library, (Chicago: The University of Chicago Press, 1936), Evaluation of Higher Institutions, Vol. IV, p. 43.

[80]Waples, Carnovsky, McPlarmidt, Rowland, and Wright, p. 55.

[81]William Edward Woods, "Factors Influencing Student Library Use: An Analysis of Studies," (1930-1964) M. A. University of Chicago, School of Library Services, 1965, p. 33.

[82]Woods, p. 29.

[83]E. W. McDiarmid, "Conditions Affecting Use of the College Library," Library Quarterly, V (1935), pp. 59-77.

[84]Woods, op. cit., p. 33.

Branscomb, in his study, reported circulation figures for several schools. At an Eastern university of 2,292 students, identified as University A, Branscomb found per capita general circulation for the second half of the 1936-37 spring term to be equivalent to 12.64[85] for the academic year. At a liberal arts college for men, with an enrollment of 836, he found per capita general circulation for a nine week period in the spring of 1937 and fall semester 1938 to average 5.2 per student[86] or equivalent, according to Woods, to 10.40 for the academic year.[87]

Branscomb also reported an unpublished study of five colleges in the Middle West by Harry L. Johnson. The student enrollment range from 238 to 675 per college, with a combined enrollment of 2,438. The period of study consisted of the academic year 1936-37. The median student withdrew 6.79 volumes, but the mean number of general collection withdrawals were 11.36.[88]

Branscomb concluded from his study:

> If one will examine the library records of a sufficiently large number of college students taught in the usual manner, he will find that the average student draws from the general collection of his college or university about 12 books per year.[89]

Interestingly, during this same general period time (1937-38) B. Lamar Johnson of Stephens College reported average student circulation of 36.94 general

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[85]Harvie Branscomb, Teaching With Books, (Chicago: Association of American Colleges, 1940), p. 30.

[86]Branscomb, p. 24.

[87]William Edward Woods, "Factors Influencing Student Library Use: An Analysis of Studies," (1930-1964), M. A. University of Chicago, School of Library Services, 1965, p. 32.

[88]Branscomb, op. cit., p. 19.

[89]Branscomb, p. 27.

collection books.[90] In fact, he reported a five year period in which the average student borrowed more than thirty books.[91] Hirsh also reported high average book circulation during this period. At Sarah Lawrence College, the annual book circulation per student ranged from forty-three to fifty volumes. The annual figure for two-week books at Bard College was above 70 per student annually for five years. In 1936-37 and 1938-39 academic years it approached eighty.[92]

Other studies during the period suggested higher averages than Branscomb's, but not as high as B. Lamar Johnson's or Hirsh's. Thompson and Nicholson considered general collection circulation of 568 students during the first semester of the academic year 1938-39 at Dickinson College. They found students that borrowed an average of 10.88 books, or 21.76 per academic year.[93] Steig at Hamilton College, also reported a slightly higher figure than Branscomb's. He found the median per capita circulation to be 8.09 titles and the mean per capita circulation to be 18.40 titles for 361 students during the 1938-39 academic year. For 1939-40 the medians was 8.96 titles and mean 20.34 titles.[94]

In her classic study at Knox College, Knapp found the average per student circulation of non-reserve loans during the spring quarter 1954 to be four. Equaled to the academic year, she concluded this to be twelve,

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[91]B. Lamar Johnson, Utilizing a College Library, (Chicago: American Library Association, 1939), p. 100.

[92]Felix E. Hirsch, "The Use of the Book Collection in the Teaching Program of a Progressive College," College and Research Libraries, II (December 1940), p. 48-49.

[93]Russell I. Thompson and John B. Nicholson, "Significant Influences on General Circulation in a Small College Library," Library Quarterly, XI (April 1941), pp. 142-185.

[94]Lewis Steig, "Circulation Records and the Study of College-Library Use," Library Quarterly, (12: 94-108, January 1942), p. 101.

matching Branscomb's average exactly.[95]

More recently Ritter attempted to survey 151 small, four-year colleges in 1962-63 concerning per student average annual general circulation. He received 117 usable responses to his questionnaire, and, since he found a variation in the percentage of full-time students making up college enrollment figures, used full-time equivalent enrollment figures for per capita computations. The following table is a summary of his results:[96]

	Enrollment	General Circulation Per Capita
High	669	78.8
Low	325	10.2
Median	521	28.2
Mean	516	15.9

These results would seem to indicate a definite increase per student for general collection circulation since Branscomb's study.

On a more limited scale were two studies conducted by Barkey and Hostrop, during the early and mid 1960's. Barkey completed a thirty day survey of 2,967 in the spring of 1962 and again in the fall of 1963 for 3,847 students at eastern Illinois University.[97] He reported the per capita general circulation only for the spring thirty-day period. He found the average to be approximately 1.6 books per student, which is approximately an average of 12.8 volumes per student for an eight-month academic year.[98]

Hostrop reported in his unpublished dissertation that 419 full-time

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[95]Patricia B. Knapp, "Suggested Program of a College Instruction in the Use of the Library," Library Quarterly, XXVI (July 1956), p. 19.

[96]Vernon R. Ritter, "Recorded Library Use in Small Four-Year College," 1962-63, College and Research Libraries, Volume 25, Number 5, September 1964, pp. 391-392.

[97]Patrick Barkley, "Patterns of Student Use of a Library," College and Research Libraries, Volume 26, Number 2, March 1965, pp. 115-118.

[98]Ibid

students at the College of the Desert averaged 4.84 titles per student for the quarter studied, or 14.52 for the year.[99] He also studied number of loans from the general collection, and found an average of 6.32 per student for a quarter, which is calculated to 18.96 for the academic year,[100] which may suggest a significant difference between number of titles and number of loans. Hostrop concluded from his thirteen week study from the fall semester of the school year 1965-1966 that per capita general collection circulation at this junior college was considerably higher than per capita general circulation of most senior institutions previously reported.[101]

Woods summarized twenty-five circulation studies, including several discussed in this paper. They range in time from 1930 to 1962. He concluded that student library use is so widely divergent from institution to institution that "attempts to generalize are well nigh doomed."[102] Of the studies he examined, Woods found that:

> Per capita non reserve reading covers a wide range but averages about 13 books per student enrolled per year.[103]

The following table, adapted from Woods,[104] who in turn adapted it from Branscomb,[105] is a summary of various studies of general collection circulation.

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[99]Richard Winfred Hostrop, "The Relationship of Academic Success and Selected Other Factors to Student Use of Library Materials at College of the Desert," (Unpublished Ed. D. Dissertation, University of California at Los Angeles, 1966), p. 58.

[100]Hostrop, p. 57.

[102]Hostrop, p. 61.

[103]William Edward Woods, "Factors Influencing Student Library Use: An Analysis of Studies," (1930-1964), M. A. University of Chicago, School of Library Services, 1965, p. 28.

[104]Woods, pp. 33-35.

[105]Harvie Branscomb, Teaching With Books, (Chicago: Association of American Colleges, 1940), p. 26.

Summary Of General Circulation Averages

Study	Group Studied	Length & Date Of Period	Student Average Equated To Academic Year
Eurich	8,362 Students, University of Minnesota	Typical Week, Fall, 1930	11.80 Volumes
Carnovsky	About 255 Men, University of Chicago	Three Quarters, 1931-32	12.76 Volumes
Waples	35 Colleges in North Central Association	Second Semester, 1932-33	11.10 Titles
McDiarmid	2,278 Students in 7 Colleges in North Central Association	Second Semester, 1932-33	13.8 Titles
Branscomb's University A	2,292 Students in an Eastern University	Second Half of Spring Term, 1936-37	12.36 Volumes
Branscomb's College B	836 Students in Men's Liberal Arts College	Nine Weeks Each: Spring Semester 1937 and Fall Semester 1938	10.40 Volumes
Harry L. Johnson	2,438 Students in 5 Midwestern Colleges	Academic Year 1936-37	11.36 Volumes
B. Lamar Johnson	Midwest Women's Junior College	Academic Year 1937-38	36.94 Volumes
Hirsh	Sarah Lawrence	Academic Year Late 1930's	43-50 Volumes
Hirsh	Bard College	1936-37 & 1938/1939 Academic Year	Near 80 Volumes
Thompson & Nicholson	568 Students Of Dickinson College	Fall Semester, 1938	21.76 Volumes
Steig	Hamilton College 316 Students 418 Students	 Fall and Spring 1938-39 Fall and Spring 1939-40	 18.4 Titles 20.34 Titles

Summary Of General Circulation Averages (continued)

Study	Group Studied	Length & Date Of Period	Student Average Equated To Academic Year
Knapp	758 Students, Knox College	Spring Semester, 1954	12.0 Volumes
Ritter	Students of 117 Small, Four Year Colleges	Academic Year 1962-63	28.2 Volumes
Barkey	2,967 Students at Eastern Illinois University	30-day Period Spring, 1962	12.8 Volumes
Hostrop	419 Full-time Students at College of the Desert	Final 13 Weeks of Fall Semester of 1965-66 Academic Year	14.52 Titles or 18.96 Volumes

Reserve Circulation

Circulation of reserve books merit some mention, although, as previously stated, Waples[106] established to the satisfaction of most researchers in this area that reserve-circulation statistics are not comparable among institutions. Several researchers have noted a trend away from heavy use of reserve books.

In 1940, Branscomb reported that the "average" undergraduate made fifty to sixty withdraws per year from the reserve book collection, consisting of approximately half that many titles.[107] Knapp found a much lower figure in her study conducted during the early 1950's. She reported 16.38 per capita reserve loans when equaled to the academic year.[108] This figure is far below the reserve figure for any of the studies Branscomb summarized. "Perhaps the heyday of the reserve collection is over," Knapp commented in her study.[109]

Ritter also investigated reserve circulation. He found reserve circulation among the 117 small liberal arts colleges he surveyed to be approximately one-fourth of Branscomb's figure. He commented:

> This shift is no doubt accounted for by less extensive use of reserve shelves as a teaching aid, and more emphasis on a student's initiative in locating sources relevant to his courses.[110]

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[106]Douglas Waples, Leon Carnovsky, E. W. McPlarmidt, Lloyd W. Rowland and Edward A. Wright, The Library, (Chicago: The University of Chicago Press, 1936), Evaluation of Higher Institutions, Vol. IV, p. 43.

[107]Harvie Branscomb, Teaching With Books, (Chicago: Association of American Colleges, 1940), p. 27.

[108]Patricia B. Knapp, "Suggested Program of a College Instruction in the Use of the Library," Library Quarterly, XXVI (July 1956), p. 19.

[109]Ibid

[110]Vernon R. Ritter, "Recorded Library Use in Small Four-Year College," 1962-63, College and Research Libraries, Volume 25, Number 5, September 1964, p. 96.

Percent of Students Who Circulate Books

Several researchers have noted that a small proportion of the college student body is responsible for a large proportion of books circulated. Branscomb used the term "negligible use" to describe this situation. He defined "negligible use" as the withdrawal of less than one book per month.[111]

Branscomb found at University A that forty-two percent of the students made no use of the general collection at all during the period studied. According to Branscomb's definitions, 66.9 percent of the undergraduates made "negligible use" of the general collection.[112] Stated another way, 53.8 percent of the student body withdrew five percent of the books circulated from the general collection, while 46.2 percent circulated ninty-five percent of the total number withdrawn.[113] Regarding reserve books, the percent of students making negligible use ranged from forty for the freshmen class to eighteen for the juniors, with an average of 29.5.[114] Branscomb also added the two types of circulation together and found that 22.9 percent of the students involved made "negligible" use of the two collections. In fact, 12.7 percent circulated no library books.[115]

In Branscomb's summary of Johnson's study, he reported that fifty-five percent of the students of the five schools studied made "negligible use" of the general collection and 22.2 percent made "negligible use" of the reserve collection.[116] 10.6 percent withdrew no books.[117] His summary

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[111]Branscomb, Harvie, Teaching With Books, (Chicago: Association of American Colleges, 1940), p. 29.

[112]Ibid. [113]Branscomb, p. 30. [114]Branscomb, p. 31.

[115]Branscomb, p. 32 [116]Branscomb, p. 33. [117]Branscomb, p. 35.

of Withington's study revealed that twenty-eight percent of the student body of the college studies made no use of books from the general collection.[118] Concerning reserve books, Branscomb concluded that the measure of negligible use of less than one book a month was too low, but between a fifth to a third of the students made virtually no use of the reserve collection.[119]

Other investigators have found similar results. McDiarmid found that twenty percent of the students borrowed five titles or fewer for one semester.[120] Thompson and Nicholson reported that in their study 13.5 percent of the students circulated no two week loans.[121]

In Knapp's study, in every circulation category, less than one-fifth of the student body accounted for half of the circulation and about half of the student body accounted for ninty percent of the circulation.[122] 48.1 percent of the student body at Knox withdrew no books during the one quarter of study and 65.68 percent less than one book per month.[123]

Weatherford reported similar results in his study. Half of the students questioned at Miami University accounted for eighty-six percent of the books borrowed, and a third accounted for three quarters of the

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[118]Harvie Branscomb, Teaching With Books, (Chicago: Association of American Colleges, 1940), p. 35.

[119]Branscomb, p. 37.

[120]E. W. McDiarmid, "Conditions Affecting Use of the College Library," Library Quarterly, V (1935), p. 75.

[121]Russell I. Thompson and John B. Nicholson, "Significant Influences on General Circulation in a Small College Library," Library Quarterly, XI (April 1941), p. 145.

[122]Patricia B. Knapp, "Suggested Program of a College Instruction in the Use of the Library," Library Quarterly, Volume XXVI (July 1956), p. 21.

[123]Knapp, p. 23.

books borrowed.[124] Ritter discovered the lowest fifty percent of the students checked out 4.9 percent of the total books circulated and highest 50 percent checked out 95.1.[125] Barkey found in his two thirty-day studies that sixty-three and sixty-two percent of the student body borrowed no books during the first and second period respectively.[126] More recently, Hostrop reported eighteen percent of the students accounted for about half of the circulation in his study.[127]

The pattern appears to be well established. Knapp reported:

> No matter how the students were grouped, the pattern of circulation within the group followed the same distribution as that for the student body as a whole. A few students borrowed a great many books; many students borrowed few or none.[128]

Percent Of Students Who Enter The Library To Use Library Materials

Closely related to the pattern of library use indicated by circulation records, is the pattern of library use indicated by a count of students who enter the library building in any given period and their reasons. Studies have found a relative small percent of the student body coming to the library to use library materials. Eurich estimated that the students using the

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[124]John Weatherford, "Student Library Habits," College and Research Libraries, XXII (September 1961) p. 371.

[125]Vernon R. Ritter, "An Investigation of Classroom-Library Relationships on a College Campus as Seen in Recorded Circulation and GPA's," College and Research Libraries, January 1968, p. 33.

[126]Patrick Barkley, "Patterns of Student Use of a Library," College and Research Libraries, March 1965, p. 121.

[127]Richard Winfred Hostrop, "The Relationship of Academic Success and Selected Other Factors to Student Use of Library Materials at College of the Desert," (Unpublished Ed D. Dissertation, University of California at Los Angeles, 1966), p. 116.

[128]Patricia B. Knapp, "Suggested Program of a College Instruction in the Use of the Library," Library Quarterly, Volume XXVI (July 1956), p. 22.

Summary Of Library Circulation By Student Body

Study	Group Studied And Period	Percent Of Student Body	Circulation
Branscomb's University A	2,292 Students at an Eastern University 1936-37	66.9% 46.2% 12.7% 53.8%	"Negligible Use" of general collection 95% of general collection 0% of all collections 5% of general collection
Harry L. Johnson	2,438 Students in 5 Midwestern Colleges 1937-38	55 % 22.2% 10.6%	"Negligible Use" of general collection "Negligible Use" of reserve collection 0% of all collections
Withington	486 Students of Woman's College of Rochester University 1937-38	28 %	0% of general collection.
McDiarmid	2,278 Students in 7 Colleges in North Central Association 1932-33	2 %	Five titles or fewer in one semester
Thompson & Nicholson	568 Students at Dickinson College 1938	13.5%	0% of general collection
Knapp	758 Students at Knox College 1954	20 % 50 % 48.1% 65.68%	50% of general collection 90% of general collection 0% of general collection "Negligible Use" of general collection
Weatherford	Miami University 1959	50 % 33 %	86% of general collection 75% of general collection

Summary Of Library Circulation By Student Body (continued)

Study	Group Studied And Period	Percent Of Student Body	Circulation
Ritter	479 Students at Grand Canyon College 1963-64	50 % 50 %	4.9% of general collection 95.1% of general collection
Barkey	2,967 - 1962 3,847 - 1963 Eastern Illinois University	63 % 62 %	0% of general collection 0% of general collection
Hostrop	419 Full-time Students at College of Desert 1965-66	18 %	50% of general collection

general library any one day is less than one-fourth the student body.[129]

Gaskill, Dunbar, and Brown reported in a 1933 study at Iowa State College that forty-seven percent of the entire student body used the library daily on the average. This figure did not include 6.3 percent of the student body who came just to use their own books.[130] Woods, though, noted that Gaskill's figure was based on head count. Using call slips, the used figure became 29.1 percent.[131]

Lyle, in his study, reported more than fifty percent of all students using the library used their own textbooks exclusively.[132] Nicholson and Barlett found at the Science Library of Massachusetts Institute of Technology in 1955 that forty percent of those students entering the library intended to use it only as a study hall.[133] Lane found at the University of Delaware in 1962 that fewer than thirty percent of the students in any school and fewer than forty percent in any class in any school were found in the library during a given week.[134] Ritter at Grand Canyon College in 1963-64 for a two-week survey period found only 3.1 percent of the student

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[129]Alvin C. Eurich, "Student Use of the Library," Library Quarterly, III (1933), p. 64.

[130]H. V. Gaskill, R. M. Dunbar, and C. H. Brown, "An Analytical Study of the Use of a College Library," Library Quarterly, 4 (October 1934), p. 271.

[131]William Edward Woods, "Factors Influencing Student Library Use: An Analysis of Studies," (1950-1964), M. A. University of Chicago, School of Library Services, 1965, p. 8.

[132]Guy R. Lyle, The President, The Professor, and The College Library, (New York: The H. W. Wilson Company, 1963) p. 55.

[133]Natalie N. Nicholson and Eleanor Barllett, "Who Uses University Libraries," College and Research Libraries, XXIII (May 1962) p. 220.

[134]Gorham Lane, "Assessing the Undergraduate Use of the University Library," College and Research Libraries, (July 1966), p. 281.

body was in the library on the average at any one time.[135] Rzasa and Moriarty surveyed 6,323 students at Purdue University and found over fifty percent of the undergraduates used the library primarily to do homework with their own books.[136]

The results of these studies tend to validate the results of studies on number of students circulating books. These studies show that a small percentage of the student body come to the library to use library materials. The circulation studies indicate that only a small percentage of the student body circulate a significant number of books.

Student Characteristics; Scholastic Achievement

In his study Branscomb asked who were the students who do not use the library:

> Are they the misfits and failures, along with others who barely get by, but who are retained by college authorities in the hope of some later blossoming of talent heretofore unrevealed?[137]

Several investigators have directed themselves to the problem of identifying characteristics of library users and non-users, and scholastic achievement has been one student characteristic which has been studied in relation to library use. Most researchers have relied upon students' course grade or grade point averages as measures of academic achievement.

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[135]Vernon R. Ritter, "An Investigation of Classroom-Library Relationships on a College Campus as Seen in Recorded Circulation and GPA's, "College and Research Libraries, January 1968, p. 35.

[136]Philip V. Rzasa and John H. Moriarty, "The Types and Needs of Academic Library Users: A Case Study of 6,568 Responses," College and Research Libraries, Volume 31, Number 6, (November 1970), p. 407.

[137]Harvie Branscomb, Teaching With Books, (Chicago: Association of American Colleges, 1940), p. 35.

Eurich reported no significant relationships between the amount of reading done by students and scholarship.[138] Woods reported that Carnovsky's investigation at the University of Chicago found a tendency for scholarship to be associated with the amount of reading of suggested, but not required titles.[139] McDiarmid found an insignificant correlation between number of titles read by each student and grade point average ($r = .173 \pm .020$).[140] When he arranged the students in four scholarship groups he found when arranged in this manner, a tendency for good students "to borrow, on the average, more titles than poor students."[141] McDiarmid's explanation for low correlation between number of loans and scholarship is interesting. McDiarmid wrote, "Good students can read fast, while poor students must reread often to master a given assignment."[142] He also observed "Some students waste their time reading, so far as academic recognition is the test."[143] Of other studies completed during the 1930's, Thompson and Nicholson noted a similar condition as McDiarmid found. They reported a progressive increase in circulation from the lowest to the highest scholastic levels, but no significant differences between groups of different scholastic levels.[144]

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[138]Alvin C. Eurich, "Student Use of the Library," Library Quarterly, III (1933), p. 104.

[139]William Edward Woods, "Factors Influencing Student Library Use: An Analysis of Studies," (1930-1964), M. A. University of Chicago, School of Library Services, 1965, p. 40.

[140]E. W. McDiarmid, "Conditions Affectin Use of the College Library," Library Quarterly, V (1935), p. 62.

[141]McDiarmid, p. 63. [142]Ibid [143]McDiarmid, p. 68.

[144]Russell I. Thompson and John B. Nicholson, "Significant Influences on General Circulation in a Small College Library," Library Quarterly, XI (April 1941), p. 145.

Branscomb concluded that there is some positive evidence that students who read more generally do better than the average student.[145] He suggested that lack of correlation between grades and borrowings of individual students may not prove much. He believed that too many different factors are at work.[146]

Steig at Hamilton College found a correlation of +.15±.032 for two periods of time. He concluded that this indicated either an insignificant correlation or no correlation.[147] However, he found a comparison of the average number of books borrowed by good, mediocre, and poor students with the average for all students revealing significant differences.[148] Harlow found a similar situation at the Missouri School of Mines and Metallurgy during the spring semester of the 1940-41 school year. He found a correlation between scholastic ranking and number of books circulated when the student body was divided into lower, middle, and upper thirds, but not in large divisions. Those students who withdrew no books were very little below the school average in scholastic rank.[149]

Knox College students exhibited a similar pattern found by researchers at other schools. Knapp found per capita withdrawals increased from groups of poorer to better students, with a slight decrease between the "D" group and the "C" group for course withdrawals from the general collection.[150]

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[145]Harvie Branscomb, Teaching With Books, (Chicago: Association of American Colleges, 1940), p. 40.

[146]Branscomb, p. 43.

[147]Lewis Steig, "Circulation Records and the Study of College-Library Use," Library Quarterly, (12: 94-108, January 1942), p. 105.

[148]Steig, p. 108.

[149]Bruce Harlow, "Are the Heaviest Readers the Best Students?" Wilson Library Bulletin, XVI (March 1942), p. 543.

[150]Patricia B. Knapp, "Suggested Program of a College Instruction in the Use of the Library," Library Quarterly, Volume XXVI (July 1956), p. 128.

Ritter found some evidence of a positive relation between grade point averages and circulation of books in his study at Grand Canyon College, Phoenix, Arizona, during the academic year. In four out of five classes of students (freshman, sophomore, junior, senior, and special) the mean grade point averages of those students not circulating books were lower than an equal number of students who were the heaviest circulators of books. He noted that it took a major increase in book use to bring only a slight increase in grade point average. Three of the five groups of non-users had grade point averages well above the minimum, which prompted Ritter to comment:

> The instructor have in effect been saying by the grading standards: The student can do above average work in a large segment of the curriculum without recorded use of the library.[151]

Hostrop found that full-time students who made one or more library loans had a mean grade-point average of 2.53, while the non-borrowers' mean grade point average was 2.36.[152] When grouped by quartiles he found no statistical relationship between scholastic achievement and use of library materials.[153] He did conclude that students who achieved greater scholastic success in college were more likely to be library users than students who did not achieve as well scholastically in college.[154]

Branscomb suggested that too many variables are involved to have a meaningful correlation among a large group of students, and Long, in a study of the freshman-sophomore library at the University of Minnesota attempted to

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[151]Vernon R. Ritter, "An Investigation of Classroom Library Relationships on a College Campus as Seen in Recorded Circulation and GPA's," College and Research Libraries, (29: 1, January 1968), pp. 34-35

[152]Richard Winfred Hostrop, "The Relationship of Academic Success and Selected Other Factors to Student Use of Library Materials at College of the Desert," (Unpublished Ed. D. Dissertation, University of California at Los Angeles, 1966), p. 39.

[153]Hostrop, p. 94. [154]Hostrop, p. 90.

control several variables. He picked a few courses and used circulation records of students in these courses. He found that students "who make use of the library for a particular course earn significantly higher grades than those who do not make use of the library."[155] Hostrop noted that grade point average of students in his study did not appear to be related to the quantitative borrowing of library materials in a degree that was statistically significant. But the mean grade point average for library non-users was 2.4 and for library users 2.54 in his study.[156] But on such evidence as has been presented here, Clayton concluded:

> ...it then appears that college students who do not rely on the library for much of their academic achievement are not necessarily failures, misfits, or even late starters.[157]

Noting that non-users make achievement marks almost identical to those of the student body as a whole, Clayton observed:

> Such pupils probably wouldn't miss the library facilities even if they were completely absent from the campus.[158]

There may be a tendency for reading or library use to be vaguely associated with scholarship, as measured by grade point average, but the one factor is not dependent on the other, and the two need not occur together.

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[155]Dewain O. Long, "Use of the Freshman-Sophomore Library by General College Students," University of Minnesota, 1967, (ED 019-936) p. 2.

[156]Richard Winfred Hostrop, "The Relationship of Academic Success and Selected Other Factors to Student Use of Library Materials at College of the Desert," (Unpublished Ed. D. Dissertation, University of California at Los Angeles, 1966), p. 77.

[157]H. Clayton, "An Investigation of Various Social and Economic Factors Influencing Student Use of the Library," (Unpublished Ph. D. Dissertation, University of Oklahoma), 1965, p. 2.

[158]Ibid.

Student Characteristics: Scholastic Aptitude

Several researchers have reported their findings concerning the relationship between library use and scholastic aptitude, as measured by the various standardized tests. Using the Minnesota College Ability Test, Eurich reported a coefficient of +.04 ± .16 for a group of sophomores, juniors and seniors. He concluded that this evidence pointed to there being no relationship between reading or not reading in the library and intelligence.[159]

Knapp dealt extensively with the question of a relationship between library circulation and scholastic aptitude. When she divided the students into four groups according to the quarters of the national ACT text norms, she found the per capita borrowing of the top group was higher than any other group except for reserve loans.[160] When she calculated the coefficients of correlation to test the association between general collection borrowing and the students ACT scores, the resulting coefficient was +.126 for course related withdrawals and +.173 for non-course withdrawals. She concluded that such low coefficient indicated that, for ungrouped scores, a relationship was insignificant.[161]

Knapp's findings are affirmed by Hostrop's investigation of the relationship between library use and scholastic ability as measured by SAT scores. He also found such a low correlation to conclude that no relationship existed between scholastic aptitude and the use of library materials.[162]

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[159]Alvin C. Eurich, "The Amount of Reading and Study Among College Students," School and Society, (37 (943): 102-104, January 21), p. 95.

[160]Patricia B. Knapp, College Teaching and the College Library, (Chicago: American Library Association, 1959), p. 24.

[161]Ibid.

[162]Richard Winfred Hostrop, "The Relationship of Academic Success and Selected Other Factors to Student Use of Library Materials at College of the Desert," (Unpublished Ed. D. Dissertation, University of California, 1966) p. 75.

Woods, in his summary of several user studies, reported studies of three individuals: Eurich, Thorne, and Woods, who found no relationship between measurable intelligence and library use. He also reported three studies by Meyer, Gerberich and Jones, and Bell, who found negligible correlations. Smith, Thompson and Nicholson, and Knapp found only small but statisically significant relationship.[163] The evidence found would seem to indicate little, if any, relationship between use of library materials and measurable scholastic aptitude.

Student Characteristics: Sex

A number of studies have found women withdrawing more books than men. McDiarmid found this to be true, but noted that women spent less time in reading per week. He found the women in his group to have a higher grade point average than the men (3.06 as compared with 2.88)[164] Gaskill, and associates, at Iowa State College found more women (sixty-three percent) as compared to men (forty-three percent) coming to the library for assigned readings. He suggested this may be due to differences in curricula, but he did note differences in reading. More men than women read newspapers and magazines.[165]

Knapp found per capita borrowing of women to be higher than men in every circulation category. However, the difference was statistically

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[163]William Edward Woods, "Factors Influencing Student Library Use: An Analysis of Studies," (1930-1964) M. A. University of Chicago, School of Library Services, 1965, p. 41.

[164]E. W. McDiarmid, Jr., "Conditions Affecting Use of the College Library," Library Quarterly, V (1935), p. 60.

[165]H. V. Gaskill, R. M. Dunbar, C. H. Brown, "An Analytical Study of the Use of a College Library," Library Quarterly, 4 (October 1934) p. 576.

significant only for course withdrawals from the general collection, where the average woman borrowed four books to the three books borrowed by the average man.[166] Long found women making greater use of the library than men for the group studied at the University of Minnesota, but men earned higher grades than women in the courses studied. He concluded that sex of students had little effect on course grade or library use.[167] Hostrop also found women borrowing more books from the general collection than men.[168] Woods concluded from his examination of the results of several studies that sex is a factor in the relationship of scholarship and reading.[169]

Other Factors: Academic Class Level

Patricia Knapp argued that academic class level should not be considered a student characteristic or attribute. She noted:

> Theoretically, academic year should serve reasonably well as an indicator of age, intellectual maturity, academic experience, and survival in the selective process. On the other hand, class level usually determines what courses any given student is likely to be taking at any given time.[170]

According to her, any significant differences in borrowing among the academic classes may be "indicative of different characteristics of the courses at

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[166]Patricia B. Knapp, College Teaching and The College Library, (Chicago: American Libraries Association, 1959) p. 23.

[167]Dewain O. Long, "Use of the Freshman-Sophomore Library by Generaly College Students," University of Minnesota, 1967, p. 10.

[168]Richard Winfred Hostrop, "The Relationship of Academic Success and Selected Other Factors to Student Use of Library Materials at College of the Desert," (Unpublished Ed. D. Dissertation, University of California-Los Angeles, 1969), p. 90.

[169]William Edward Woods, "Factors Influencing Student Library Use: An Analysis of Studies," (1930-1964) M. A. University of Chicago, School of Library Services, 1965, p. 41.

[170]Knapp, op. cit., p. 26.

each class level rather than different characteristics of the students at each class level."[171]

The majority of studies have shown the withdrawal average of each academic class increasing from freshman to senior year. In his early study, Carnovsky suggested two explanations for this. First, upperclassmen have had the opportunity to form habits of extensive reading and learn something of the value of library use. Second, upperclassmen are a much more highly selected group than freshman. Many of the poorer students do not continue beyond their freshman year.[172] Kramer and Kramer in their study at California State Polytechnic College reported that a higher percentage of library users (73.7) percent return after the freshman year than do non-library users (fifty-seven percent).[173] This would tend to suggest that the upperclasses are made up of a higher percentage of library users, partially due to the higher attrition rate of non-library users. McDiarmid also agreed with Carnovsky's explanation.[174]

Thompson and Nicholoson, however, found a Dickinson College that freshmen far surpassed other classes in the number of volumes circulated but the upper classmen read more books in their entirety than did lower classmen.[175] Branscomb found at University A that general collection

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[171]Knapp, p. 26.

[172]Leon Carnovsky, "The Dormitory Library: An Experiment in Stimulating Reading," Library Quarterly, (3 (1): 37-65, January 1933) pp. 58-67.

[173]Lloyd A. Kramer and Martha B. Kramer, "The College Library and the Drop-Out," College and Research Libraries, July 1968, p. 312.

[174]E. W. McDiarmid, Jr., "Conditions Affecting Use of the College Library," Library Quarterly, V (1935), p. 61.

[175]Russell I. Thompson and John B. Nicholson, "Significant Influences on General Circulation in a Small College Library," Library Quarterly, XI April 1941), p. 180.

withdrawals increased for each level and reserve book increased for each level except for a slight drop between the junior and senior year.[176] At College B, he found a smaller percent of the students not making use of the general collection as academic class level progressed from freshman to senior.[177]

Steig found at Hamilton College a marked decrease in "negligible users," as defined by Branscomb, from the freshman to senior classes. Approximately sixty-nine percent of the freshman were "negligible users," while seniors varied between 32.58 percent and 23.91 percent.[178] Knapp found an increase in per capita withdrawals from class to class from freshmen to seniors for almost all circulation categories. The one exception being that sophomores had a larger per capita reserve circulation than juniors.[179] She found the difference between underclassmen and upperclassmen noteworthy for course-related borrowing from the general collection.[180] Lane reported the percentage of undergraduates withdrawing no books as decreasing somewhat from freshman through senior year in his study.[181]

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[176]Harvie Branscomb, Teaching With Books, (Chicago: Association of American Colleges, 1940), p. 23.

[177]Branscomb, p. 34.

[178]Lewis Steig, "Circulation Records and the Study of College-Library Use," Library Quarterly, (Chicago: American Library Association, 1959), p. 26.

[179]Patricia B. Knapp, College Teaching and the College Library, (Chicago: American Library Association, 1959), p. 26.

[180]Knapp, p. 27.

[181]Gorham Lane, "Assessing the Undergraduate Use of the University Library," College and Research Libraries, (July 1966) p. 279.

A majority of the studies have shown that the withdrawals average of each academic class increased from freshman to senior year. Several of them indicated the percentage of users also increased for each class.

Other Factors: Discipline

Given the nature of some disciplines it seems only reasonable that they may make little use of the library. Steig is critical of Branscomb's application of "negligible-use" for this reason. What may be "negligible use" in the humanities may be heavy use of the library in the sciences.[182] One probably should expect more use of the library from students majoring in the humanities and social sciences than those majoring in the natural sciences. Several studies have shown this expectation not to be unreasonable.

Eurich reported in his study of one typical week, that approximately thirty percent of the books withdrawn from the general collection were in the field of literature. Of this number, approximately one-half were in English literature and one-fifth in American literature. History ranked second with little more than twelve percent of the books circulated from the general collection. Economics ranked third and philosophy fourth. All other fields had less than five percent of the total general collection circulation.[183]

At Iowa State College, Gaskill and his fellow researchers found students taking courses in the following departments withdrawing the greatest number of books: education, psychology, economics, foods, textiles

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[182]Lewis Steig, "Circulation Records and the Study of College-Library Use," Library Quarterly, (12: 94-108, January 1942), p. 108.

[183]Alvin C. Eurich, "Student Use of the Library," Library Quarterly, III (1933), p. 87.

and sociology. The departments are arranged in the order of number of withdrawals at the time of the study. Iowa State College was chiefly a technological institution with no liberal arts college at the time of the study.[184]

McDiarmid found the humanities, represented by such departments as English, philosophy, and religion; and the social sciences, represented by education, sociology, and economics to be consistently high in average number accounted for nearly one-half of total loans to students' social sciences for about one-quarter; and the natural sciences for a little less than one-tenth.[186] Lane also found books in the categories of literature and social sciences to be by far the most frequently withdrawn and constituted almost fifty percent of all withdrawals.[187]

Most investigators have found the social sciences and humanities accounting for the bulk of library circulation. Although there are exceptions for each discipline and variations from institution to institution, these fields are consistently found among the top in library circulation. Other fields often mentioned for considerable circulation are economics, art, science, sociology, philosophy, and religion.[188]

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[184]H. V. Gaskill, R. M. Dunbar, and C. H. Brown, "An Analytical Study of the Use of a College Library," Library Quarterly, 4 (October 1934), p. 583.

[185]E. W. McDiarmid, Jr., "Conditions Affecting Use of the College Library," Library Quarterly, V (1935), p. 65.

[186]Lewis Steig, "Circulation Records and the Study of College-Library Use," Library Quarterly, (12: 94-108, January 1942), p. 107.

[187]Gorham Lane, "Assessing the Undergraduate Use of the University Library," College and Research Libraries, (July 1966), p. 280.

[188]William Edward Woods, "Factors Influencing Student Library Use: An Analysis of Studies," (1930-1964) M. A. University of Chicago, School of Library Services, 1965. p. 46.

Other Factors: Miscellaneous Studies

Various factors not directly related to academic institutions have been investigated regarding what relation they might have to library use. For example, Clayton found at Southwestern College that use of the library was not particularly responsive to the variables of either occupation or education of students' parents, and only influenced to an insignificant degree by size of high school from which the students graduated.[189]

Hostrop investigated the relationship of twenty-one student characteristics to use of periodicals, reserve books, books from the general collection, and total library loans. No statistical significance was established for the relationship of quantitative borrowing of library materials to the following characteristics: Sex (except for books from the general collection); Age; Marital Status; Living Situation; Number of Persons in Household; Scholastic Aptitude; High School Attended; High School Grade-Point Average; Fall Semester Grade-Point Average; Cumulative Grade Point Average; Major; Public Library Use; Periodicals Subscribed To; Language Spoken At Home; and Weekly Hours Worked For Pay.[190]

Hostrop found that students who were older than the student population as a whole were likely to be non-library users. Generally, library users were living at home, had greater academic success in high school and college than the average of the college population. Students who carried heavier semester

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[189]H. Clayton, "An Investigation of Various Social and Economic Factors Influencing Student Use of the Library," (Unpublished Ph. D. Dissertation, University of Oklahoma, 1965), p. 117.

[190]Richard Winfred Hostrop, "The Relationship of Academic Success and Selected Other Factors to Student Use of Library Materials at College of the Desert," (Unpublished Ed. D. Dissertation, University of California-Los Angeles, 1966), pp. 64-65.

unit loads in the college were more likely to be library users than those who carried lighter unit loans.[191]

Both Walker and Harkin investigated the relationship of previous library services in relation to academic performance. Walker found that availability of pre-college library services had little effect on college achievement of a group of Illinois University freshmen.[192] Harkin found, for a group of Indiana high school graduates at Ball State University, similar results. Students who had a pre-college high media-student ratio showed no marked difference in academic success in relation to expressed satisfaction from study, or in greater interest in assuming responsibility for their own education than those who were provided a low media-student ratio.[193] The conclusion from these two studies, as stated by Walker is, "The level of library service available to a high school student is neither good nor bad as preparation for success in college."[194]

Influence of Courses

Because of the lack of a definite positive relationship between library use and such factors as grade point average and scholastic aptitude several researchers have directed their attention to the role of the classroom instructor and course work. Their findings have generally indicated that the classroom instructor has a significant role in determining use of the library.

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[191]Hostrop, pp. 89-90.

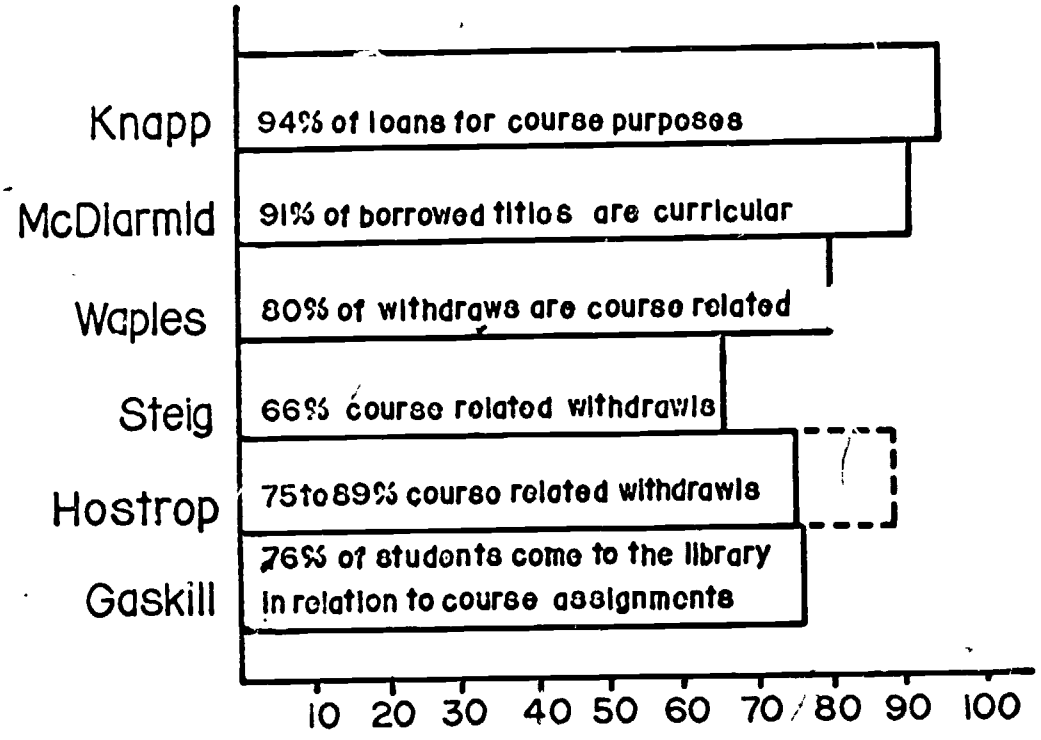
[192]Richard D. Walker, "The Availability of Library Service and Academic Achievement," Research Series No. 4, Illinois State Library, 1963, p. 48.

[193]Willard Dwight Harkin, "Analysis of Secondary School Library Media Programs in Relation to Academic Success of Ball State University Students in their Freshman and Sophomore Years,"(Unpublished Ed. D. Dissertation, Ball State University, 1971), p. 96.

[194]Walker, p. 49.

Patricia Knapp found that ninety-four percent of library loans were made for course purpose, which is higher than any previous study. She suggested that the differences may have been due to methodology.[195]

RELATION OF LIBRARY USE TO CIRCULATION



McDiarmid found ninety-one percent of all titles borrowed to be curricular.[196] Steig reported that Waples found four-fifths of the withdrawals at thirty-five North Central Association Colleges were course

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[195]Patricia B. Knapp, College Teaching and the College Library, (Chicago: American Library Association, 1959), p. 186

[196]E. W. McDiarmid, Jr., "Conditions Affecting Use of the College Library," Library Quarterly, V (1935), p. 65

related. At Hamilton, Steig found the figure to be closer to two-thirds.[197] Hostrop's study found the figure to range between seventy-five percent and eighty-nine percent.[198] Gaskill and his associates found seventy-six percent of the students coming to the library came in connection with course assignments.[199]

While this points out that in these studies most of the library use may be attributed to courses, Knapp and Hostrop found that few courses generated a large amount of library use. Knapp found that out of 160 courses, eleven accounted for more than half the library circulation. Forty accounted for almost ninety percent of the withdrawals for course work. Less than one-tenth of the course were "dependent" on the general collection in that at least four of five students enrolled borrowed books.[200] She reported that subject was much less important than class size and class level in stimulating library use. According to her, "Small, advanced classed were the only classes to stimulate extensive and/problem-solving use of the library."[201]

Hostrop found at the junior college he studied that even fewer courses accounted for a larger portion of library circulation. He found that during a quarter of circulation five courses accounted for more than

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[197]Lewis Steig, "Circulation Records and the Study of College-Library Use," Library Quarterly, (12: 94-108, January 1942), p. 102.

[198]Richard Windred Hostrop, "The Relationship of Academic Success and Selected Other Factors to Student Use of Library Materials at College of the Desert," (Unpublished Ed. D. Dissertation, University of California-Los Angeles, 1966), p. 56.

[199]H. V. Gaskill, R. M. Dunbar, and C. H. Brown, "An Analytical Study of the Use of a College Library," Library Quarterly, 4 (October 1934), p. 576.

[200]Patricia B. Knapp, College Teaching and the College Library, (Chicago: American Library Association, 1959), p. 92.

[201]Knapp, p. 93

half, and twenty-seven accounted for more than ninety percent of the withdrawals for course work.[202]

Knapp concluded that:

> Use of the library is not an essential element, perhaps not even an important element, in the education of the college student.[203]

Researchers tend to agree that the way to increased use of the library is through the classroom instructor. Waples noted early in the study of this area that:

> The decision by an instructor of Freshman English to add ten titles to hi reading list may do more to increase the total circulation than all the incentives the library staff can apply.[204]

Steig also observed:

> Special shelves, displays, book lists, publicity-all the advertising devices that librarians use to increase circulation of recreational reading--may have some effect upon the student who is already a reader, but that they do much to convert non-readers seems highly questionable.[205]

Ritter agreed that the key to extensive use of the library by students is in the classroom. He observed, "Whatever other factors may have a

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[202]Richard Winfred Hostrop, "The Relationship of Academic Success and Selected Other Factors to Student Use of Library Materials at College of the Desert," (Unpublished Ed. D. Dissertation, University of California-Los Angeles, 1966), p. 100.

[203]Patricia B. Knapp, College Teaching and the College Library, (Chicago: American Library Association, 1959), p. 1.

[204]Douglas Waples, Leon Carnovsky, E. W. McPlarmidt, Lloyd W. Rowland and Edward A. Wright, The Library (Chicago: The University of Chicago Press, 1936), Evaluation of Higher Institutions, Vol. IV. p. 59.

[205]Lewis Steig, "Circulation Records and the Study of College-Library Use," Library Quarterly, (12: 94-108, January 1942), p. 104.

part, the crux of the matter lies in the classroom rather than the library itself."[206]

This route is not necessarily easy. As Knapp has noted, "Instruction in the use of the library will be really effective only if it is presented by the regular teaching faculty as an integral part of content courses in all subject fields."[207] The importance of continued emphasis on library use in all fields is emphasized by the findings of a study by Long. He discovered in studying a group at the University of Minnesota that:

> Registration in courses which make reference to the library has no effect on grade or library use in a course which makes much reference to the library the following quarter.[208]

With most colleges and universities a fundamental change in the nature of instruction would be needed. If there is not change, as Branscomb wrote over thirty years ago:

> ... the question must be raised whether we need these large libraries, if present teaching methods continue.[209]

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[206]Vernon R. Ritter, "An Investigation of Classroom-Library Relationships on a College Campus as Seen in Recorded Circulation and GPA's," College and Research Libraries, Kamiaru, 1968, p. 31.

[207]Louis Shores, Robert Jordon, and John Harvey, eds., The Library-College: Contributions for American Higher Education at the Jamestown College Workshop, 1965 (Philadelphia: Drexel Press, 1966) p. 19.

[208]Dewa... O. Long, "Use of the Freshman-Sophomore Library by Generally College Students," University of Minnesota, 1967, p. 10.

[209]Harvie Branscomb, Teaching With Books, Chicago: Association of American Colleges, 1940) p. 8.

Chapter 3

KEARNEY STATE COLLEGE AND CALVIN T. RYAN LIBRARY

The College

Located in Kearney, Nebraska, a small city of a population of approximately 20,000 in south central Nebraska, Kearney State College was founded in 1903 as a two year State Normal School. In 1921, the program was expanded to four years, and the name of the institution changed to Nebraska State Teachers College at Kearney. Bachelor of Arts and Bachelor of Science degrees were first authorized in 1941. In 1956 a graduate program (Masters of Science in Education) was initiated. The College adopted its present name in 1963.

All undergraduate and graduate degree programs are fully accredited by the North Central Associations of Colleges and Secondary Schools and the National Council for Accredition of Teacher Education.[210] In 1974, the North Central Association gave blanket approval for the initiation of sixth year Specialist Programs.

A tax supported state institution, the College receives its primary financial support from the State Government. In 1972-73 the State Government provided $3,830,861 (58.13%) and student tuition and fees $2,029,409 (30.79%) of the total $6,590,356 Educational and General Revenue.[211]

210"The Specialist Degree." (Kearney, Neb.: Kearney State College, 1974), p. 40.

211"Basic Institutional Data." (Kearney, Neb.: Kearney State College, 1974), p. 12.

Student Body

The enrollment of the college has grown from 430 in the first class in 1904 to a peak of 5,870 in 1970-71. Approximately 99% of those who apply are accepted and approximately 98% come from within the State of Nebraska.[212] According to data available from the office of the registrar, the table on the following page represents the enrollment breakdown from the 1973-74 academic year:

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[212]"Basic Institutional Data," p. 10

1973-1974 Academic Year

	Fall-1973				Spring-1974			
	Total Number	% of Under-Graduate	FTE	% of FTE Under-Graduate	Total Number	% of Under-Graduate	FTE	% of FTE Under-Graduate
Freshman	1,448	33.8	1,303	32.9	1,158	30.4	1,067	30.0
Sophomore	980	22.9	931	23.5	900	23.6	851	23.9
Junior	983	23.0	923	23.3	851	22.4	802	22.6
Senior	875	20.4	797	20.2	898	23.6	835	23.5
TOTAL UNDERGRADUATES	4,286		3,954		3,807		3,555	
Graduates								
On Campus	287				390			
Off Campus	202				302			
TOTAL GRADUATES	489		233		692		304	
TOTAL-ALL STUDENTS	4,775		4,187		4,499		3,859	

Second Semester total student enrollment was approximately 94% of the first semester's enrollment. Second semester undergraduate enrollment was approximately 89% of first. Total FTE for the second semester was 92% of the first semester. FTE for undergraduates for second semester was approximately 90% of FTE of the first semester. Twelve semester credit hours equals one full time equivalent student (FTE).

The high school class ranking of entering Freshmen is represented by the following table:[213]

Percent in top 10% of high school class	16.8%
Percent in top 25% of high school class	42.8%
Percent in top 50% of high school class	73.6%
Percent in top 75% of high school class	91.5%

Of the entering Freshmen who reported SAT scores, the following information is available:[214]

Class Average SAT Schore on Verbal	416	On Mathematics	476
Percent Scoring Above 500 on Verbal	21%	On Mathematics	39%
Percent Scoring Above 600 on Verbal	3%	On Mathematics	11%
Percent Scoring Above 700 on Verbal	1%	On Mathematics	1%

Faculty

The following table indicates the number of faculty during the 1974 spring semester, as reported by the Office of the Vice President of Academic Affairs:

Total FTE Instructional Staff	207	
Total Full Time Staff	192	
Total Part-Time Staff	39	
Full Time Staff With Doctorates	80	
Percent of Full Time Staff With Doctorates		43.9%
Ratio of FTE Instruction Staff to FTE Students (Grad. and Undergrad.) Spring 1974		18.6

The table on the following page indicates the distribution of faculty by rank, degrees earned, and salary as reported to the North Central Association, March 1974:[215]

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[213]"Basic Institutional Data," p. 7.

[214]Ibid.

[215]Ibid., p. 10.

	Highest Degree Earned						Full Time Salary		
	Full Time	Percent	Bachelor	Master's	Spec.	Doct.	Mean	High	Low
Professor	45	22.1	---	2	---	43	$15,078	$16,660	$11,385
Assoc. Professor	62	30.4	---	32	---	31	12,955	15,000	10,095
Assl. Professor	56	27.4	---	42	---	16	11,052	14,700	9,470
Instructor	41	20.1	5	42	1	---	9,686	11,200	8,600
TOTAL	204								
Plus 10 Part Time	10								
	214		5 (2%)	118 (55%)	1 (15%)	90 (42%)			

Of the individuals listed in the 1973-74 college catalog as being faculty, approximately twenty-three percent had received one or more degrees from Kearney State. Approximately twenty-seven percent of the faculty had received one or more degrees from other institutions of higher education within Nebraska. It is noted that many individuals listed as faculty are at this writing no longer with the college or are not part of the instructional staff.

Curriculum

In 1969-70 Kearney State College reorganized its academic program from seven divisions of instruction to five schools of instruction. They are the School of Business and Technology, the School of Education, School of Fine Arts and Humanities, the School of Natural and Social Sciences, and the School of Graduate Study.

During the 1973-74 academic year the School of Business and Technology offered programs in Business Administration, Business Education, Dietetics, Home Economics, Industrial Education, Military Science and Vocational Education. Counseling and Educational Psychology, Educational Administration, Early Childhood Education, Elementary Education, Special Education, Educational Media, and Physical Education were offered by the School of Education. The School of Fine Arts and Humanities offered programs in Art, English, French, German, Spanish, Journalism, Music, Speech, Theatre, Speech Correction, and Radio-Television. Biology, Chemistry, Computer Science, Criminal Justice, Economics, Environmental Studies, Geography, History, Mathematics, Medical Technology, Physics, Physical Science, Physical Therapy, Political Science, Pre-Professional Programs in Medicine and Law, Psychology, Social Sciences, and Sociology were all

offered by the School of Natural and Social Sciences. During the 1973-74 academic year the programs indicated on the following page were offered:[216]

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[216]"Basic Institutional Data," pp. 19-20b.

Estimated Graduates In Each Program

	B.A.	B.A. In Education	B.S.	B.S. In Education	Total & Percent Of Undergraduates		M.S. In Education & Percent Of Graduates	
Art	1	20	2		23	2.7	3	3.4
Biology			24	13	37	4.5	3	3.4
Broadcasting			1		1	.1		
Business Administration	4		124		128	15.4		
Business Education		19			19	2.2		
Chemistry			4	1	5	.6		
Computer Science			5		5	.6		
Dietetics			11		11	1.3		
Economics		1	5		6	.7		
Counseling & Guidance							16	18.6
Elementary Education		135			135	16.3	5	5.8
Elementary Principal							4	4.7
English	2	14			16	1.9	2	2.3
Foreign Language	1	9			10	1.2		
Geography	1	8	3		12	1.4		
History	6	19	1		26	3.1	4	4.7
Home Economics			6	31	37	4.7	4	4.7
Industrial Arts		32			32	3.8	10	11.6
Industrial Management Technology	3		25		28	3.4		
Journalism		4	4		8	.9		
Mathematics		1	22	34	57	6.9	5	5.8
Medical Technology			5		5	.6		
Music		19			19	2.2	2	2.3
Physical Education		40			40	4.8	5.	5.8
Physical Theraphy			2		2	.2		
Physics								
Political Science	7		2		9	1		
Psychology	9		28		37	4.5		

Estimated Graduates In Each Program (continued)

	B.A.	B.A. In Education	B.S.	B.S. In Education	Total & Percent Of Undergraduates		M.S. In Education & Percent Of Graduates	
Recreation			12		12	1.4		
Secondary Principal							11	12.7
Sociology	4	5	10		15	1.8		
Special Education		32			32	3.9	2	2.3
Speech-Theatre	1	13	3		17	2	1	1.2
Social Sciences		3			3	.4		
Speech Pathology		26			26	3.1		
Vocational Education			1		1	.1	7	8.1
TOTAL	39	400	308	82	828			
	(4.7% of undergraduate degree)	(48.3% of undergraduate degrees)	(37.2% of undergraduate degrees)	(9.9% of undergraduate degrees)				

Library

Housed in a building completed in 1963, the library is contained within an air-conditioned facility which features modular type construction. Formal and informal study areas, individual carrels, seminar rooms, and typing facilities are provided. During the 1973-74 academ year the staff consisted of: The director, administrative assistant, two reference librarians, two media specialists, one cataloging librarian, one cataloging librarian associate, one serials librarian, one government documents librarian, one learning curriculum associate librarian and one circulation librarian.

The staff generally attempts to encourage active participation of the library in the education process of the college. During the 1973-74 academic year over 2,000 students came to the library either for an orientation tour or period of instruction in the use of library materials relating to their classroom assignments.

During the 1973-74 academic year the budget for the library was as follows:

Library Budget

I.	Personnel		
	Professional Salaries	$145,744	
	Clerical Salaries	59,544	
	Student Assistant Wages	15,856	
			$221,134
II.	Collections		
	Reference	$ 4,923	
	Serials	48,778	
	Library Materials		
	Department Fund	39,595	
	Graduate Fund	6,891	
	Program Initiation Fund	2,059	
		48,545	
	Library Fund	20,764	
			123,010

III.	Operations		
	Operating Expenses	17,894	
	Supplies	10,651	
	Equipment	16,647	
	Binding	1,253	
			46,445
IV.	Other		
	Overencumbrances		24,434
			$415,023

The total Library Collection as of June 30, 1974, including increase for previous year:

		Increase	
Dewey Decimal Collection	62,129	------	
Library of Congress Collection	56,591	4,992	
Children Collection	3,874	84	
Autograph Collection	211	5	
Special Collection (Nebraska)	1,884	68	
Reference	10,631	-460	(Reclassified)
Bound Periodicals	26,545	2,308	
Curriculum Laboratory	8,972	350	
Archives	8,469	407	
Thesis	68	0	
Microfilm	8,733	856	
Microfiche	145,902 pieces	17,123 pieces	
	22,906 titles	12,076 titles	
Microcard	47,715 pieces	2,157 pieces	
Ultramicrofiche	14,575 pieces	0	
State Documents	1,061	1,061	
Federal Documents	80,813	8,283	
	478,173 pieces	37,694 pieces	

The regular book collections are further broken down, as of June 30, 1974:

Dewey Decimal Collection

000-099	General Works	2,809
100-199	Philosophy	2,255
200-299	Religion	1,352
300-399	Social Sciences	15,858

400-499	Philology	940
500-599	Natural Science	5,166
600-699	Useful Arts	6,032
700-799	Fine Arts	5,414
800-899	Literature	11,689
900-999	History	10,614

Library of Congress Collection

A	General Works	404
B	Philosophy-Religion	3,926
C	History-Auxiliary Sciences	291
D	History and Topography	3,658
E-F	America	6,051
G	Geography-Anthropology	1,540
H	Social Sciences	8,143
J	Political Science	1,583
K	Law	678
L	Education	4,171
M	Music	2,624
N	Fine Arts	2,521
P	Language and Literature	11,198
Q	Science	5,133
R	Medicine	1,726
S	Agriculture	483
T	Technology	1,566
U	Military Science	348
V	Naval Science	
Z	Bibliography and Library Science	547

As part of a building evaluation completed during the Fall semester 1974, it was found that the Library contained 460 reader stations of all types. According to standards suggested by Western Interstate Commission on Higher Education, the Library should have approximately 436 additional reader stations.

Design of the Study

The purpose of this study is to determine the relationship between academic library use, as measured by circulation records, and selected student characteristics, particularly, sex, class, declared academic major and grade point average. The college computer center provided a list

of students who met the following reqirements during the spring semester 1974:

(1) All students were currently enrolled as undergraduates.
(2) All students were taking twelve or more credit-hours i. e. full-time students.
(3) All students were between the ages of eighteen and twenty-three years old, inclusive.
(4) All students were residents of the State of Nebraska.

This list consisted of 2,793 students of which 1,324 were men and 1,469 were women. According to the registrar's office, this list represented approximately eighty percent of the undergraduate population. It is believed that these students represented the core undergraduate population of Kearney State College, and any relationship between library use and the various student characteristics would be most evident in this group.

Beginning March 18, 1974, and ending May 10, 1974 all general collection circulation slips were kept by the library's circulation department as the circulated general collection materials were returned to the library. A majority of the materials included in the library's collection was allowed to circulate. This included bound periodicals, records, government documents, the learning curriculum collection of books and teaching aids, microfiche and ultramicrofiche, as well as the general book collection. Portable microfiche and ultrafiche readers were also included in the circulation records. The New York Times on microfilm, microfilmed periodicals, and the reference collection were not allowed to circulate. At the end of each day, the circulation slips were alphabetized and matched manually with the names of the selected students.

After the end of the period, the records for the reserve collection were examined. The reserve collection contained not only books, but also

bound periodicals, tape cassettes, film loops, selected current magazines, individual journal articles, and instructor-prepared study packets. The students in the study were credited with one reserve circulation for each time their name was found on a reserve circulation card for the period of the study.

The period involved was approximately half a semester. It began with the first day after the mid-semester break and ended with the last day library materials were to be checked in at the end of the semester. The period consisted of fifty-four days, or almost eight weeks of a semester lasting slightly less than seventeen weeks. Once the circulation records for reserve and general collection had been compared with the selected list of students, the number of general collection items and reserve collection items were punched onto computer cards for each student. The computer center then analyzed the data.

Limitations of the Study

There are several factors which may limit the predictive value of this study, but these factors are not severe enough to seriously endanger the value of it. This study shares the limitation of similar studies which have been previously mentioned in this paper.

The students involved did not consist of the entire student body, and the time period did not cover an entire academic year or even a semester. As with other studies of similar nature, previously mentioned, use of circulation records to study library use has certain limitations. Besides the ones mentioned, in this study some circulation cards were unreadible or inadvertantly destroyed, although it is not believed they constituted a large enough number to change the results of the study.

Finally, this study did not attempt to measure all reading by the students or even library use. For example, the local public library was temporarily housed in a college dormitory during the period of this study. Students did have access to its collection. However, it is believed its use by students did not appreciably affect the use of the college library.

One important factor involved in a study such as this one is the period of time involved. Other investigators have found circulation rates vary during the academic year. A study limited to one part of the academic year is handicapped for predictive purposes unless it is known how the rate of circulation for that period relates to the rate for the rest of the academic year.

For this study it is known that full-time equivalent enrollment declined from the fall to the spring semester of the academic year. Total decline was approximately eight percent. The undergraduate full-time equivalent enrollment (representing approximately ninty-two to ninty-four percent of the full-time equivalent enrollment) declined approximately ten percent, with a majority of this being an eighteen percent decline in Freshman enrollment. Graduate full-time equivalent enrollment actually increased thirty percent.

This change is reflected in the number of credit hours generated during each semester. From the fall to spring semester total credit hours were down eight percent. Upper division credit hours (thirty-six to forty-two percent of total credit hours) were up five percent. Lower division credit hours (sixty-one to fifty-five percent of total credit hours) were down eighteen percent from the fall to spring semester 1973-74. This change varied from department to department. Total circulation

by graduate and undergraduate students also varied from one period to another as the table on the following page indicates:

Library Circulation Of Academic
Year 1973-1974 In Relation Study Period

	1st Semester (50% of Academic Year)	2nd Semester (50% of Academic Year)	March 18-May 10 Approximate 45% Semester	March 18-May 10 Approximate 23% Academic Year
Dewey Decimal Collection (Total Circulated 1973-74 12,754 or 26% of General Collection Circulated)	51%	49%	46%	23%
Library of Congress Collection (Total Circulated 1973-74 20,197 or 41% of General Collection Circulated)	49%	51%	50%	26%
Bound Periodicals, Microfiche, Curriculum and other Collections (Total Circulated 15,739 or 32% of General Collection Circulated)	47%	53%	42%	22%
Total General Collection Circulated - 48,690	49%	51%	46%	26%
Reserve Circulation (13,628)	54%	46%	40%	18%

As shown here, the general circulation varied slightly, depending on which section of it was being analyzed. The total general circulation of all the graduates and undergraduates was approximately proportionate to the length of the period of the study, however, with enrollment down average per capita circulation would have been higher during this period. Reserve Circulation was slightly under represented during the period under study.

In any case, the value of this study is limited in predicting total circulation for an entire semester or academic year. The circulation records were kept as items were returned--not as they were checked out. Some items returned March 18 could have been checked out as long as four weeks previously. Even if circulation were constant throughout the year, one cannot simply multiply the circulation rates found in this study by a figure derived from the relationship of the length of the period of study to an academic year to determine circulation rates for an academic year. However, this should not affect the various relationships between student characteristics and library circulation.

Total Student Use of the Library

The data resulting from this study tended to reaffirm certain findings of previous investigations. Most importantly, the results indicated that a majority of the students studied used the library, according to circulation records, only to a negligible degree. This group included only on-campus students and did not include student teachers.

Approximately forty percent neither used a general collection item nor a reserve collection item during the study period. No general collection items were used by fifty-three percent, and no reserve collection

items were used by 72.5 percent of this group, according to circulation records. As the following table indicates, these figures varied from class to class:

Percent Of Students Within
Each Class Not Using
Library Items

	Freshman	Sophomore	Junior	Senior	Total
General Collection	64.1%	53.8%	45.2%	39.1%	53 %
Reserve Collection	78.8%	64.4%	70.5%	70.5%	72.5%

The following table indicates that a small percentage of the students account for a large percentage of the circulation:

Circulation Of Reserve And
General Collection

	General Collection	Reserve Collection
75% of Students Least Active	13.8%	3.2%
10% of Students Most Active	56.6%	54.7%

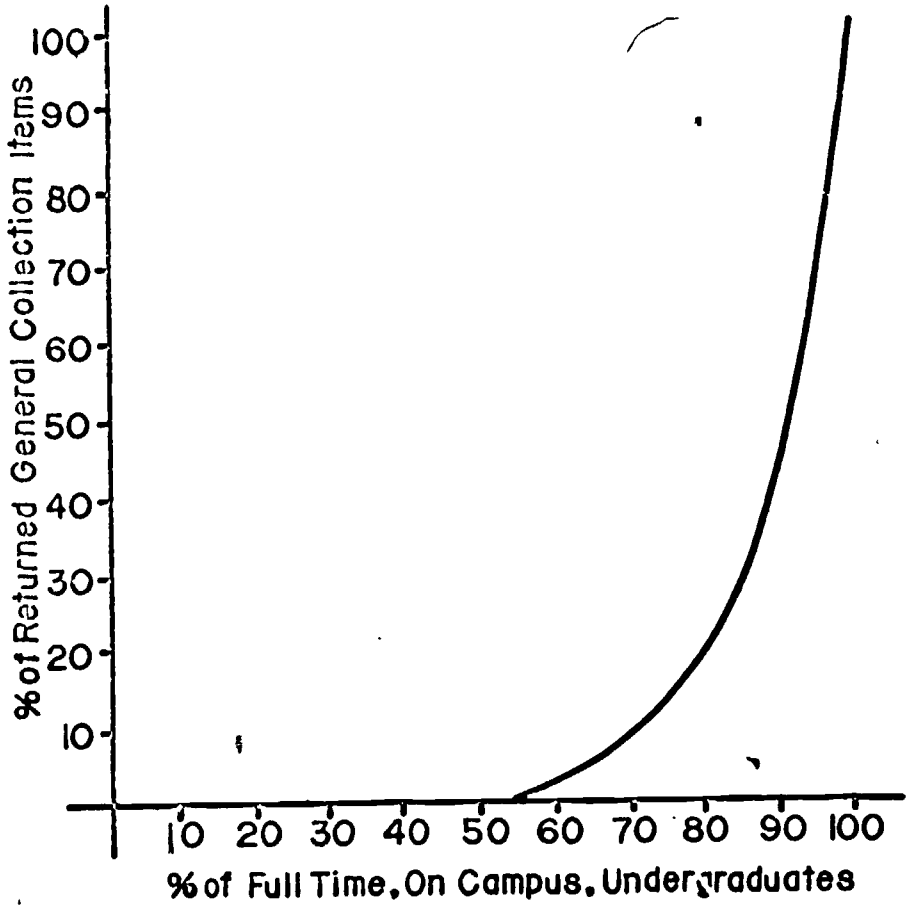
A comparison of means and medians also suggest a wide divergence of library use among students. The following table displays these figures:

Median And Mean Circulation
Of Select Groups Of Students

		General Collection	Reserve Collection
Median	ALL	.9	.7
Mean	ALL	2.7	.8
	75% of Students Least Active	.5	.03
	10% of Students Most Active	15.5	5.5

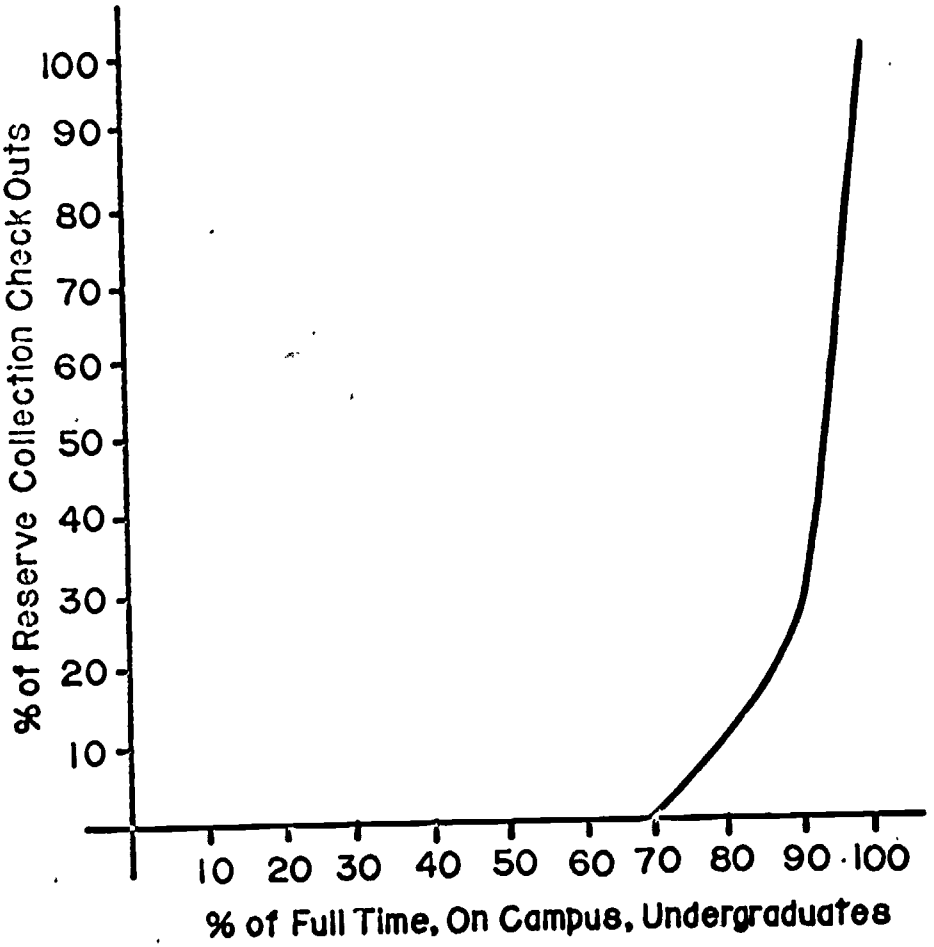
The following graph indicates through a cumulative percentage distribution that most students circulated no general collection items and a few students cirulated many items:

GENERAL COLLECTION CIRCULATION



The following graph indicates through a cumulative frequency distribution that even a higher percent of the students circulated no reserve collection items:

RESERVE COLLECTION CIRCULATION



Differences In Circulation Rates Between Male And Female Students

In examing the results it is evident that within each academic class women circulate more items per capita than men, and a smaller percentage of women were nonusers. The following tables indicates this pattern:

Use Of General Collection
Items By Male And Female Students

	Freshman		Sophomore		Junior		Senior	
	Male	Female	Male	Female	Male	Female	Male	Female
Percent Not Using Any Items	72.6%	57.7%	65.7%	42.6%	54.9%	35.1%	46.6%	28.9%
Mean	.86	2.0	1.1	3.5	2.1	5.4	2.8	7.2
Median	.68	.87	.76	1.6	.9	2.7	1.3	5.3

For this entire group, 1,275 men averaged 1.6 general collection items and 1,415 women averaged 3.8 general collection items returned per student.

The following table indicates the differences in circulation of the reserve collection:

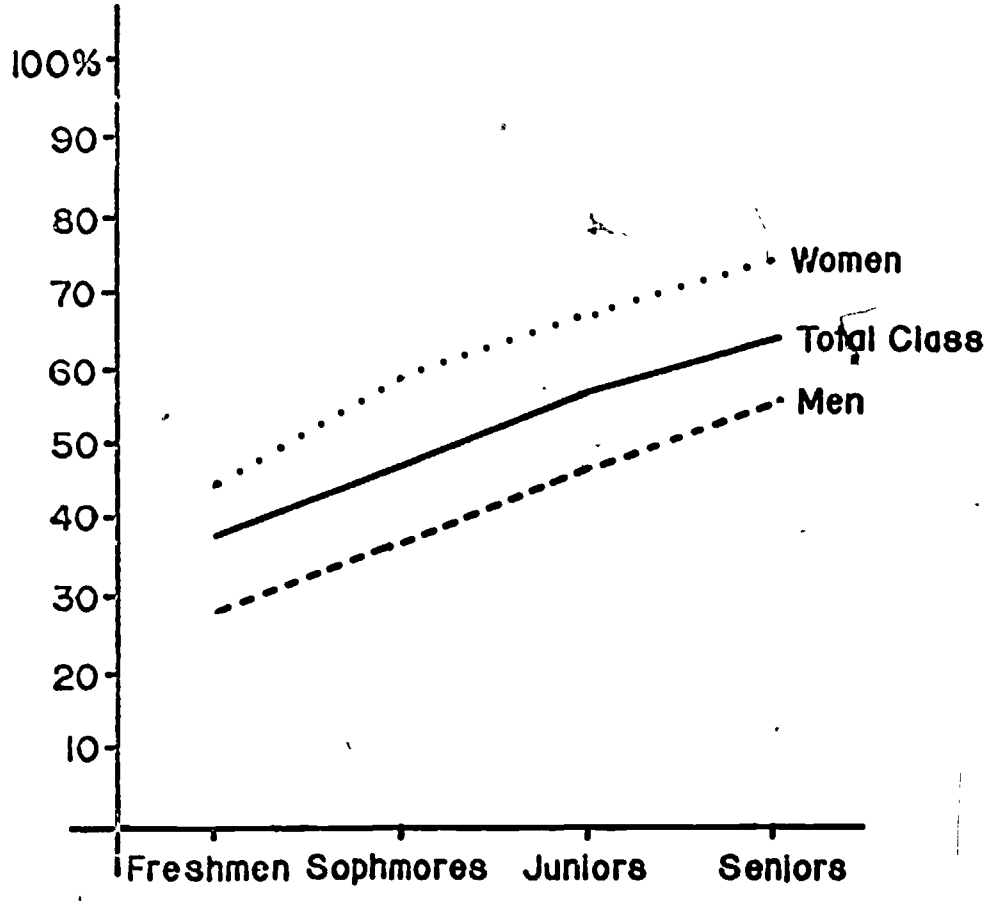
Use Of Reserve Collection
Items By Male And Female Students

	Freshman		Sophomore		Junior		Senior	
	Male	Female	Male	Female	Male	Female	Male	Female
Percent Not Using Any Items	83.9%	74.8%	80.3%	58.6%	80.2%	60.4%	78.0%	60.4%
Mean	.32	.63	.46	1.17	.53	1.41	.62	1.56
Median	.60	.67	.62	.85	.62	.83	.64	.83

For this entire group 1,273 men averaged .46 reserve collection items and 1,412 women averaged 1.08 reserve collection items circulated per student.

It is important to note that the increase in the number of male and female users is almost constant from class to class. Additional study is needed to fully explain this situation, which the following graph deplicts:

% OF STUDENTS RETURNING GENERAL COLLECTION ITEMS



Difference In Library Circulation By Academic Class

As noted previously, in the various graphs and tables, library use, as indicated by circulation records, seems to increase from the Freshman to the Senior year. Per student mean circulation generally increased while the percent of nonusers in each class generally decreased. Several factors may explain this, particularly the attrition of library nonusers. The following tables indicate the mean circulation per

student for the reserve and general collection:

Mean Student Circulation By Academic Class

	Freshman	Sophomore	Junior	Senior
General Collection	1.53	2.44	3.7	4.65
Reserve Collection	.5	.85	.96	1.02

Use Of The Library And Academic Achievement

A major concern of this study has been the relationship between student use of the library and academic achievement in the classroom. An important question to be answered is whether use of the library is a necessary part of the educational experience of students at Kearney State College. The findings of this study have indicated little relationship between use of the library, as measured by circulation records, and academic achievement, as measured by grade point average.

At Kearney State College eight grade index were used during the period of study A, B+, B, C+, C, D+, D, F, in descending order with F indicating academic failure. Letter grades carried weighted scholarship points as follows: A=4 points, B+=3.5 points, B=3 points, C+=2.5 points, C=2 points, D+=1.5 points, D=1 point, and F=0 points per credit hour attempted. To be in good academic standing, all students must have maintained a 2.0 cumulative grade point average for course work taken at this college.

One accepted statistical measure of the relationship between two variables is coefficient of correlation. Correlation techniques are used to ascertain the extent of which two variables are related, that is, the extent to which variation of one factor corresponds to variation in another. In general, the magnitude of a correlation depends upon the extent to which an increase or decrease in one variable is accompanied,

by an increase or decrease in the other--whether in the same direction or the opposite direction. A coefficient of correlation is generally denoted by the letter r on a scale from one to minus one. If r equals one then a perfect positive correlation exists. If r is equal to minus one then a perfect negative correlation exists. If r is close to zero then the dependency between the two variables is weak. Very little of the variation of one factor can be attributed to its relationship with the other factor.

This test must be used with a degree of caution. The values of r close to one or minus one cannot be interpreted as cause-effect relationships. Two factors may vary together without one causing the other to vary, or they both may vary together because of a third factor. While r's value will indicate the strength of the relationship, r^2 gives the proportion of the total variations of one factor which is accounted for by the relationship with the second factor. Using this technique the researcher can determine whether a relationship exists, but it will not indicate why a relationship exists. The interpretation of the meaning of the relationship must be accomplished through logical analysis.

In this study a coefficient of correlation was computed in determining the relationship between students' current semester grade point average and library circulation during the period of study. This study included 1,255 men and 1,398 women. Excluded were Freshmen and Sophomore students for whom no current semester grade point average was available and student teachers.

For the 1,255 men the coefficient of correlation between the grade point average and general collection was equal to .10831 (r= .10831).

This relationship is statistically significant at the ninety-nine percent confidence level, meaning a correlation figure this high could happen by chance less than one time out of a hundred. A positive correlation between grade point average and general collection circulation was established in this case. However, $r^2 = .0017$, therefore only .17 percent of the total variation of the grade point average can be attributed to the relationship with general collection circulation. While the relationship is statistically significant and one can reject the null hypothesis that there is no relationship, it is, in fact, almost negligible. The following table indicates the results of the application of the correlation test on large groups of students. Appendix C indicates the results for students when grouped by declared academic major, and Appendix D indicates results for Junior and Senior students when grouped by sex and declared academic major. In this case the assumption was that a majority of upperclassmen are taking most of their courses in their declared major. In both appendices groups of fewer than five are excluded.

Analysis Of Student Use Of The Library
And Academic Achievement

	Number Of Students	Mean G.P.A.	Mean General Collection	Correlation B. General And G.P.A.	Mean Reserve Collection	Correlation B. R.E.S. & G.P.A.
Men	1,255	2.63 (.98)+	1.65 (3.8)	.108**	.49 (1.46)	.104**
Women	1,398	2.79 (.98)	3.96 (6.9)	.086**	1.11 (2.47)	.129**
Freshmen	848	2.54 (1.04)	1.56 (3.75)	.092**	.54 (1.81)	.087**
Sophomores	654	2.75 (1.00)	2.42 (.90)	.1140**	.9 (1.82)	.181**
Juniors	594	2.90 (.90)	3.92 (6.58)	.1476**	1.03 (2.42)	.156**
Seniors	545	2.74 (1.3)	4.27 (7.87)	.04	.919 (2.27)	.071**

**Significant to the 99 Percent confidence level
+Figures in Parenthesis are standard deviations

As indicated in the discussion of the correlation between the grade point average of male students and their circulation rates, statistically significant correlation were found in most areas, but none of them strong. In completing this test, the mean per student circulation rates and standard deviations were included. Although the computer program excluded more students as the test was run by academic class, the results indicated a heavier general circulation rate as students progress from the Freshman to the Senior year.

Other statistically valid methods are available to analyze relationships. In this study the chi square test was used. The group of students excluded student teachers and those Freshmen and Sophomores for whom no semester grade point average was available.

The chi square test is used to determine in terms of probability whether the observed proportion is a chance departure from the expected proportion. In this study it was used to determine whether negligible or nonusers of the library had a significantly higher proportion of failing students (less than 2.00 semester grade point average) and a significantly lower proportion of honor students (3.5 and above semester grade point average) than heavier users of the library had. The following table indicates those students who were included in the study by circulation rates. The first category includes those students who circulated no reserve or general collection items during the study period. The second category, which included students in the first, included those students who met Branscomb's definition of "negligible use", that is circulating one or fewer general collection items per month.

General Categories Of Library Circulation

Number Of Items Circulated	Number Of Students	Percent Of Total Students Included
0 Reserve and General Circulation	946	39.7
1 or Fewer General Collection Items (Branscomb's "negligible use")	1,486	62.3
2-4 General Collection Items	408	17.1
5-8 General Collecton Items	240	10.1
9-16 General Collection Items	168	7.0
17 and More General Collection Items	82	3.4
TOTAL	2,384	

For each of the academic classes, the students were divided by semester grade point averages and general collection rates. For each class a comparison was also made between the proportion of nonusers of the reserve and general collection, and those students who circulated over five general collection items. The null hypothesis tested was the independence of library circulation and the semester grade point average. This test is only approximate and is even less so, if expected values are small. It was for this reason that several categories were combined in the second test. Also, since a number of Freshmen and Sophomore students were included for whom no semester grade point average was available, their semester grade point average was recorded as zero. All Freshman and Sophomore students with zero semester grade point average were excluded from this group.

The following table indicates the general categories into which students were grouped. Failing students were students with a grade point average less than 2.0. Passing students had semester grade point averages

from 2.0 to 3.499, and honor students had grade point averages from 3.5 to 4.0. For the chi square test, expected frequencies are included in parenthesis. The following table is for the Freshmen students included:

General Collection Circulation Of Freshman Students By Academic Achievement

Semester Grade Point Average	0-1	2-4	5-8	9-16	17+	Total
Failing (000-1.999) Students	106(96)*	16 (24)	8 (8)	2 (5)	2 (2)	134
Passing (2.0-3.499) Students	378(376)	94 (92)	28 (32)	17 (18)	8 (7)	525
Honor (3.5-4.0) Students	88 (100)	30 (24)	12 (8)	8 (5)	1 (2)	139
TOTAL	572	140	48	27	11	798

*Expected frequencies are in parenthesis

Chi square is equal to sum of the observed frequencies minus the expected observations. The mathematical formual is $X^2 = \frac{(f-e)^2}{e}$. In this case X^2 is equal to approximately 13.5. In this type of test a certain number of degrees of freedom must be allowed. The number of degrees of freedom is based on the number of columns (k) and rows (r) in the contingency table. In this case the number of degrees of freedom is expressed by the formula (k-1) (r-1) or eight. In checking a table of critical values of chi square, it was found that observed frequencies resulting in this value of chi square could occur by chance more than five times out of a hundred. According to accepted statistical standards the null hypothesis that there is no difference among the proportions of failing, passing, and honor students with different general collection circulation rates cannot be rejected.

A second chi square test was calculated comparing the extremes among library circulation of the Freshman class: those who circulated

no general or reserve collection items and whose who circulated five or more general collection items. The following table indicates the observed and expected frequencies:

Academic Achievement Of Freshman
Students For Extremes Of Library Circulation

Semester Grade Point Average	No Reserve Or General Circulation	Five General Collection Items Or More	Total
Failing (000-1.999) Students	77 (73)*	12 (16)	89
Passing - (2.0-3.499) Students	265 (260)	53 (57)	318
Honor (3.5-4.0) Students	51 (59)	21 (13)	72
TOTAL	393	86	479

*Expected frequencies are in parenthesis

In this case chi squared equaled 7.55 with two degrees of freedom. The null hypothesis that there is no differences among the proportions can be rejected at the ninety-five percent level of confidence. This suggests that students who circulate no library items have more failing students and fewer honor students as a group than those students who circulate five or more general collection items.

The following contingency table was established for the Sophomore students included in this study:

General Collection Circulation Of Sophomore
Students By Academic Achievement

Semester Grade Point Average	0-1	2-4	5-8	9-16	17+	Total
Failing (000-1.999) Students	51 (41)*	10 (11)	1 (8)	3 (5)	0 (1)	65
Passing (2.0-3.499) Students	270 (260)	69 (68)	45 (49)	23 (30)	7 (7)	414
Honor (3.5-4.0) Students	82 (102)	26 (27)	30 (19)	21 (11)	4 (3)	163
TOTAL	403	105	76	47	11	642

*Expected frequencies are in parenthesis

For this table chi square is equal to approximately 32.49, which is sufficient to reject the null hypothesis that there is no difference in the proportions at the ninty-nine percent confidence level with eight degrees freedom.

A second chi square test was made comparing nonusers with those students who circulated five or more general collection items.

Academic Achievement Among Sophomore
Students For Extremes Of Library Circulation

Semester Grade Point Average	No Reserve Or General Collection Circulation	Five Or More General Collection Circulation	Total
Failing (000-1.999) Students	9 (8)	4 (5)	13
Passing (2.0-3.499) Students	151 (202)	75 (90)	226
Honor (3.5-4.0) Students	43 (59)	55 (39)	98
TOTAL	203	134	337

*Expected frequencies are in parenthesis

The resulting value of chi square is 26.6. With two degrees of freedom, this is sufficient to reject the null hypothesis at the ninty-nine percent level of confidence that no difference exists among the proportions. The results of the chi square test applied to both tables suggest that for Sophomore students, as a group, heavier users of the library have a larger proportion of honor students and a smaller proportion of failing students than do light or nonusers.

The following contingency table was established for the Junior students included in this study:

General Collection Circulation Of Junior Students By Academic Achievement

Semester Grade Point Average	0-1	2-4	5-8	9-16	17+	Total
Failing (000-1.999) Students	31 (20)*	8 (9)	1 (7)	3 (5)	1 (3)	44
Passing (2.0-3.499) Students	105 (126)	72 (60)	45 (43)	37 (30)	19 (19)	278
Honor (3.5-4.0) Students	85 (75)	25 (36)	30 (26)	12 (18)	13 (11)	165
TOTAL	221	105	76	52	33	487

*Expected values are in parenthesis

The value of chi square is approximately 28.72 which is sufficient to reject the null hypothesis. However, while negligible users have a higher proportion of failing students and lower proportion of honor students than expect, the heavier users do not always have a significantly lower proportion of honor students than expected.

A second chi square test was calculated comparing nonusers with those students who circulated five or more general collection items.

Academic Achievement Among Junior Students For Extremes Of Library Circulation

Semester Grade Point Average	No Reserve Or General Collection Circulation	Five Or More General Collection Circulation	Total
Failing (000-1.999) Students	33 (22)*	5 (16)	38
Passing (2.0-3.499) Students	128 (130)	101 (99)	229
Honor (3.5-4.0) Students	52 (61)	55 (46)	107
TOTAL	213	161	374

*Expected frequencies are in parenthesis

Chi square equals 16.22 with two degrees of freedom. This is sufficient to reject the null hypothesis at the ninty-nine percent confidence level that there exists no difference among the proportions. Through this

test the difference between nonusers and heavier users of the library becomes more evident.

The following table was established for the Senior students included in the study:

General Collection Circulation Of Senior Students By Academic Achievement

Semester Grade Point Average	0-1	2-4	5-8	9-16	17+	Total
Failing (000-1.999) Students	17 (11)*	3 (4)	3 (4)	1 (3)	0 (2)	24
Passing (2.0-3.499) Students	101 (109)	51 (42)	37 (36)	23 (36)	17 (16)	229
Honor (3.5-4.0) Students	57 (55)	14 (21)	18 (18)	18 (13)	9 (8)	116
TOTAL	175	68	58	42	26	369

*Expected frequencies are in parenthesis

Chi square equals 18.85 with eight degrees of freedom. This is sufficient to reject the null hypothesis at the ninty-five percent confidence level, but not the ninty-nine percent confidence level, that no difference among proportions exists.

A second chi square test was applied nonusers and students who circulated five general collection items or more.

Academic Achievement Among Senior Students For Extremes Of Library Circulation

Semester Grade Point Average	No Reserve Or General Collection Circulation	Five Or More General Collection Circulation	Total
Failing (000-1.999) Students	15 (10)*	4 (9)	19
Passing (2.0-3.499) Students	57 (73)	77 (61)	134
Honor (3.5-4.0) Students	37 (25)	9 (21)	46
TOTAL	109	90	199

*Expected frequencies are in parenthesis

For this table chi square equals 25.57 with two degrees of freedom. This is sufficient to reject the null hypothesis that no difference exists among the proportion. It is important to note that these results suggest that nonusers have a higher proportion of honor students than heavy circulators, as well as a higher proportion of failures.

In general, the use of the chi square test suggests that heavier library users, as a group, have a higher proportion of honor students and a lower proportion of failing students than light or nonusers of the library. However, the consistency of the results vary from class to class.

Declared Academic Major

Other studies have found students of certain disciplines (history and English, for example) using the library's collections heavier than the average student. In this study the library use of on campus Junior and Senior students was made by declared academic majors. Only those students who received a semester grade point average of 2.0 or above were included. Two assumptions were made in doing this study. First, it was assumed that a majority of Junior and Senior students would be taking most of their classes in the discipline of their declared academic major. Second, it was assumed a semester grade point average of 2.0 or above indicated that the students' instructors believed the students generally d[illegible] satisfactory work during the semester. Realizing the limitations of these assumptions, a margin of error must be allowed, but the results of this analysis are valid enough to note certain conditions. The following table includes the results of this analysis. Percentages of the total number of students included for each academic major are in parenthesis.

Declared Academic Majors And General Collection Circulation
Rates Of On Campus Full-Time Junior And Senior Students
With Semester G.P.A. Of 2.0 And Above

	0 General & Reserve		0-1 General		2-4 General		5-8 General		9-16 General		17+ General		Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Undeclared	(40%) 2	2	(50%) 4	1	(30%) 2	1	0	0	(20%) 1	1	0	0	10
Art	(34%) 4	7	(50%) 6	10	(12.5%) 1	3	(15.6%) 2	3	(15.6%) 2	3	(6.3%) 1	1	32
Biology	(23.3%) 9	1	(53.5%) 20	3	(23.3%) 7	3	(11.6%) 3	2	(6.9%) 1	2	(4.7%) 0	2	43
Broadcasting	(33%) 2	0	(50%) 3	0	(16.6%) 1	0	(3.3%) 2	0	0	0	0	0	6
Business Administration	(54.6%) 74	8	(78%) 101	16	(10.6%) 13	3	(6.7%) 7	3	(4%) 5	1	(.7%) 0	1	150
Business Education	(50%) 2	7	(88.9%) 4	12	0	0	(11.1%) 0	2	0	0	0	0	18
Chemistry	(20%) 1	0	(40%) 1	1	(40%) 2	0	0	0	0	0	(20%) 0	1	5
Computer Science	(50%) 1	0	(50%) 1	0	(50%) 1	0	0	0	0	0	0	0	2
Dietetics	(20%) 0	1	(40%) 0	2	0	0	0	0	(40%) 0	2	(20%) 0	1	5
Elementary Education	(8.3%) 1	5	(11.1%) 2	6	(16.7%) 2	10	(19.4%) 2	12	(23.6%) 2	15	(29.2%) 0	21	72
English	(9.5%) 0	2	(23.8%) 1	4	(14.3%) 2	1	(28.6%) 2	4	(33.3%) 0	7	0	0	21
French	(40%) 0	2	(40%) 0	2	(20%) 1	0	0	0	(40%) 0	2	0	0	5
Geography	(20%) 2	0	(60%) 6	0	(20%) 2	0	(10%) 1	0	0	0	(10%) 1	0	10

Declared Academic Majors And General Collection Circulation Rates Of On Campus Full-Time Junior And Senior Students With Semester G.P.A. Of 2.0 And Above (continued)

	0 General & Reserve		0-1 General		2-4 General		5-8 General		9-16 General		17+ General		Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
German	0	0	(50%) 0	1	0	0	0	0	(50%) 1	0	0	0	2
History	(12.5%) 3	1	(28.1%) 5	4	(15.6%) 5	0	(31.3%) 10	0	(6.3%) 2	0	(18.8%) 2	4	32
Home Economics	(17.5%) 1	6	(47.5%) 1	18	(12.5%) 0	5	(15%) 0	6	(20%) 0	8	(5%) 0	2	40
Industrial Education	(66.7%) 28	0	(92.9%) 39	0	(2.4%) 1	0	(2.4%) 1	0	0	0	(2.4%) 1	0	42
Journalism	(11.1%) 0	1	(44.4%) 2	2	(22.2%) 1	1	(33.3%) 1	2	0	0	0	0	9
Mathematics	(63.8%) 17	3	(76.6%) 22	14	(6.4%) 3	0	(17%) 5	3	0	0	0	0	47
Medical Technology	(45.5%) 3	2	(72.7%) 4	4	(27.3%) 1	2	0	0	0	0	0	0	11
Music	(29.6%) 2	6	(70.4%) 6	13	(7.4%) 1	1	(18.5%) 3	2	0	0	(3.7%) 0	1	27
Physical Education	(23.3%) 2	8	(39.5%) 4	13	(27.9%) 3	9	(14%) 1	5	(11.6%) 1	4	(.7%) 0	3	43
Physical Science	(9%) 1	0	(18.2%) 2	0	(54.5%) 3	3	(18.2%) 2	0	(9%) 1	0	0	0	11
Physics	(33.3%) 1	0	(100%) 3	0	0	0	0	0	0	0	0	0	3
Political Science	0	0	(16.7%) 2	0	(41.7%) 5	0	(16.7%) 2	0	(25%) 3	0	0	0	12
Pre-Engineer	(100%) 2	0	(100%) 2	0	0	0	0	0	0	0	0	0	2

Declared Academic Majors And General Collection Circulation Rates Of On Campus Full-Time Junior And Senior Students With Semester G.P.A. Of 2.0 And Above (continued)

	0 General & Reserve		0-1 General		2-4 General		5-8 General		9-16 General		17+ General		Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Psychology	(16.7%) 3	2	(33.3%) 6	4	(36.7%) 7	4	(13.3%) 3	1	(10%) 0	3	(6.7%) 1	1	30
Recreation	(13%) 3	0	(34.7%) 7	1	(21.7%) 5	0	(30.4%) 3	4	(8.7%) 1	1	(4.3%) 0	1	23
Sociology	(33.3%) 2	3	(46.7%) 4	3	0	0	(26.7%) 3	1	(13.3%) 0	2	(13.3%) 1	1	15
Spanish	(23.1%) 1	2	(17.4%) 1	3	(15.4%) 1	1	(17.4%) 1	3	(15.4%) 1	1	(7.7%) 0	1	13
Special Education	(15.2%) 0	5	(24.2%) 2	6	(15.2%) 1	4	(27.3%) 1	8	(18.2%) 1	5	(15.2%) 0	5	33
Speech	(22.2%) 1	1	(44.4%) 2	2	(55.6%) 2	3	0	0	0	0	0	0	9
Speech Pathology	0	0	(21.4%) 0	3	(21.4%) 1	2	(21.4%) 1	2	(14.3%) 0	2	(21.4%) 0	3	14
Theatre	(18.2%) 1	1	(16.7%) 1	2	(36.4%) 2	2	(18.2%) 0	2	(9.1%) 0	1	(9.1%) 0	1	11
	(31.6%) 169	86	(51.2%) 264	150	(16.6%) 76	58	(15%) 56	65	(10.1%) 22	60	(7%) 7	50	808

It is important to note that almost every discipline has nonusers of the library. Even such traditionally heavy users of the library as English and history have students who are negligible or nonusers of the library. Some disciplines, such as business administration, business education, mathematics, industrial education, and music are dominated by negligible or nonusers. Other disciplines, such as elementary education and home economics, are somewhat surprising in the percent of heavy users. While female students predominate in these two disciplines which appear to make heavier than average use of the library, female students in general do not increase in the percent of nonusers faster than men from the Freshman to the Senior year. This may suggest that academic major may have less to do with library use than certain characteristics associated with sex.

It is to be noted that even at a circulation rate of eight general collection items, this is only equivalent to one general collection item per month per three semester credit hour class, assuming a minimum full-time load of twelve semester credit hours. Of the Junior and Senior students included in this analysis, 82.8 percent were able to earn a grade point average of 2.0 or above by circulating this number of general collection items or fewer. This would seem to indicate that extensive use of the library's collection is not necessary for even most upperclassmen in order to receive satisfactory academic achievement.

Chapter 4

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study was conducted to determine the relationship between use of the library and the classroom program at Kearney State College. An important point to be studied was whether the library was a necessary part of the students' educational experience at this college. The data, on which this study was based, was library circulation, declared academic major, academic class, and grade point averages of full-time, undergraduate students.

Two major questions were posed in ascertaining the library's relationship to the classroom. First, what kind of circulation patterns do full-time undergraduate students demonstrate? Does it vary from male to female, from academic class to academic class, or from one declared major to another? Second, what relationship exists between use, as indicated by circulation records, and academic achievement, as indicated by semester grade point average? Does the relationship vary from one sex to another, from one academic class to another, or from one declared major to another? Three methods were used in answering these questions. For the first question, only descriptive displays of circulation frequencies were used. For the second question, statistical tests of chi square as well as coefficient of correlation were used, in addition to descriptive displays of circulation frequencies.

Conclusion

From the data gathered and analyzed by this study an important conclusion concerning the library's role in the educational experience of students at Kearney State College can be made. A large percentage of the students make no use of the library, and , according to Branscomb's definition, a majority make only "negligible use" of the library. Only a small minority appears to make appreciable use of the library.

A second important conclusion is that use of the library has almost no influence on the semester grade point average of students. Students of certain disciplines tend to make heavier use of the library than others, but there exists with in each academic discipline students who make negligible or no use of the library. Female students make heavier use of the library than male students do, but, again, a significant percentage of each sex are nonusers or negligible users. Use of the library tends to increase from the freshman to the senior year, and the percentage of nonusers and negligible users also drops, but within each class these individuals remain a significant proportion. Therefore, it is concluded that use of the college library is not a necessary part of the educational experience of most students at Kearney State College.

Recommendations

It is recommended that conclusions of this study be accepted as a valid indication of the role of the library at Kearney State College. The limitations of this study have been noted, and this recommendation is being made with full awareness of these limitations. Certain steps were not taken, such as a study of in-library use of library items and

surveying the students, which could have added to this study. However, if the findings of other studies previously mentioned are pertinent to this library, and there is little reason to believe they are not, then this use of circulation records to study library use presents an accurate picture of this particular library.

A typical recommendation made in studies of this type is for additional research. No doubt additional research would be helpful, particularly in areas not covered by this study, such as in-library use. But the seven and half week period of the study has passed and many of its aspects can never be studied to relate them to the findings of this study. Without a change in the manual procedures of collecting and examining circulation records, the author would not recommend a second study of this nature.

In any case, it is difficult to argue that the results of this study are highly biased in favor of low use of the library. Granting that upon a few occasions the library had more than 200 students in it, which appeared to fill it to its effective seating capacity, the average body count during the period of the study for the peak hours (10 A.M., 2 P.M. and 8 P.M.) was slightly over eighty students. This represented a very small percentage of the total student body enrolled. This number is even more important when one considers that other studies have found most students in a library are using their own textbooks or non-curriculum related items.

Most classroom instructors, administrators, and librarians at least pay lip service to the importance of the library. The importance of this study is it shows that relatively few students are putting into

practice what these groups of individuals believe to be important. This awareness should bring concern and action.

Librarians have a definite responsibility to encourage use of the library. They should attempt to acquire, organize and promote use of library materials, but they are limited in their effectiveness. Librarians can only put forth suggestions, use persuasion, or make appeals towards the faculty and students in regards to library services. It is the faculty who, within limits, can forcefully encourage students to use the library. They have the leverage, through the grading system, to do this.

On the other hand, there may be legitimate reasons for not doing so. To say that few students use the library does not necessarily mean the library is not being used to its present capacity. Libraries appear to be operating at a small percentage of their potential. Limited staffing, seating capacity, and other resources often make it difficult for a higher percentage of the students to utilize the library's resources.

For example, at Kearney State College during the 1974 fall semester an experimental three-week project was carried on with over 200 freshmen English students. The purpose was to teach them a basic library search process. This influx of a relatively small number of students (when compared to the total study body) appeared to tax the present library staff and building facilities to near or beyond their limits. A few determined instructors could easily overload the present staff and facilities.

A second area of exploration is that certain disciplines may have legitimate reason for not making more use of the library. The discipline may be laboratory-oriented or the library collection poor in its area. If the collection is poor, perhaps that discipline's budget needs to be increased, and its selection methods improved. If students of that

discipline truly have little reason to use the library's resources, then this should also be reflected in the library budget.

A variety of studies and areas could be suggested in this study. Many have already been suggested by others. A major concern of this study has been to bring to the attention of librarians, instructors, and administrators the role the library plays at Kearney State College. This writer believes that increased library utilization by both students and faculty should be the goal of the college, even if it means additional staff and resources to implement this goal. This, of course, recognizes that there are good ways and poor ways to use the library, particularly just to increase circulation. Also, this recognizes that not everyone may benefit equally from increased library use. A few individuals seem to do quite well without formal education, and this may also be the case with library usage.

However, it must be assumed that increased library usage would be beneficial to both the individual and society. Kearney State College, through its Academic Master Plan and Mission of Kearney State College, has assumed the responsibility of assisting students in becoming educated, decision-making adults capable of contending with contemporary problems of a changing society. Such individuals must be able to seek-out and utilize the available information in order to examine society critically and constructively. They must be able to add to the existing body of thought through a continued search for knowledge. These objectives can be best realized by this institution through the effective and efficient utilization of library resources.

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Appendix A
General Collection Circulation

	Freshman		Sophomore		Junior		Senior		
Items	Male	Female	Male	Female	Male	Female	Male	Female	Students
0	271	287	259	206	166	102	96	44	1,427
1	30	53	46	58	29	31	27	9	283
2	24	36	27	29	26	18	16	8	184
3	20	30	24	31	23	6	15	5	154
4	7	20	8	28	10	22	6	8	109
5	6	10	7	24	8	10	12	8	85
6	1	9	6	13	9	13	6	7	64
7	6	10	7	11	10	11	4	9	68
8	1	6	0	13	5	10	5	7	47
9	0	7	4	9	4	11	5	5	45
10	1	3	1	10	0	2	0	6	23
11	0	5	1	8	2	4	3	3	26
12	2	3	0	11	2	4	1	4	27
13	1	4	2	5	2	3	2	4	23
14	0	1	0	1	1	8	1	4	16
15	2	0	1	5	1	5	0	2	16
16	0	0	0	3	0	2	1	1	7
17	1	2	1	2	0	4	1	2	13
18	0	1	0	3	0	7	1	0	12
19	0	2	0	2	0	4	1	1	10
20	0	1	0	1	0	1	1	2	6
21	0	1	0	3	0	1	0	1	6
22	0	0	0	0	0	3	0	2	5
23	0	1	0	2	1	0	0	1	5
24	0	0	0	0	1	0	0	0	1
25	0	0	0	1	1	0	1	0	3

Appendix A
General Collection Circulation (continued)

	Freshman		Sophomore		Junior		Senior		
Items	Male	Female	Male	Female	Male	Female	Male	Female	Students
26	0	0	0	1	0	0	0	0	1
27	0	0	0	0	0	1	0	1	2
28	0	1	0	0	0	3	0	0	3
30	0	0	0	0	0	0	0	1	1
31	0	0	0	0	0	1	1	0	2
32	0	0	0	1	0	1	0	1	3
33	0	0	0	0	0	0	0	1	1
34	0	0	0	0	1	0	0	2	3
37	0	0	0	1	0	0	0	0	1
41	0	0	0	0	0	1	0	1	2
46	0	0	0	0	0	0	0	1	1
50	0	0	0	0	0	1	0	0	1
54	0	1	0	1	0	0	0	0	2
56	0	0	0	0	0	1	0	0	1
60	0	0	0	0	0	0	0	1	1
Students	373	490	394	483	302	290	206	152	2,690
General Collection Items	322	1,003	457	1,686	637	1,559	568	1,097	

Appendix B
Reserve Collection Circulation

	Freshman		Sophomore		Junior		Senior		
Items	Male	Female	Male	Female	Male	Female	Male	Female	Students
0	313	366	[illegible]	282	243	174	160	93	1,946
1	29	44	36	64	30	32	20	19	274
2	18	34	17	52	11	29	7	14	182
3	4	18	12	32	5	16	4	8	99
4	5	8	6	15	2	5	4	6	51
5	2	9	1	8	5	6	5	2	38
6	1	3	1	14	3	8	1	1	32
7	0	2	1	4	0	3	1	1	12
8	1	3	1	5	0	2	2	1	15
9	0	1	1	3	1	5	0	2	13
10	0	0	0	0	1	4	0	2	7
11	0	0	0	1	1	1	1	0	4
12	0	0	0	1	1	1	0	1	4
13	0	0	0	0	0	2	0	0	2
14	0	0	1	0	0	0	0	0	1
15	0	0	0	0	0	0	0	3	3
16	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	1	1
39	0	1	0	0	0	0	0	0	1
Students	373	489	392	481	303	288	205	154	2,685
Reserve Collection Items	121	308	179	566	160	407	127	241	

Appendix C
Relationship of Semester Grade Point Average
And Library Circulation By Declared Academic Major+

Major	Number of Students	Mean General Collection Circulation	Mean Reserve Collection Circulation	Correlation of GPA To General Collection Circulation	Correlation of GPA To Reserve Collection Circulation
Art	97	3.4	.63	.18	.24*
Biology	98	2.3	1.07	.008	.006
Broadcasting	27	2.0	0	.38*	0
Business Admin.	357	1.2	.43	.09	.16**
Business Education	53	1.2	.92	.21	.16
Chemistry	14	3.6	.86	.17	.22
Computer Science	15	.87	.33	-.45	.38
Dietitics	25	5.8	1.76	.31	.18
Elementary Education	26[illegible]	5.4	1.03	.18**	.13*
English	65	5.9	.80	-.04	.006
French	10	3.1	.10	:14	-.64*
Geograpny	21	4.0	2.38	.21	.39
German	10	3.3	.90	.16	-.11
History	72	6.0	1.2	.21	.18
Home Economics	114	4.1	1.9	-.09	.23*
Industrial Education	76	.88	.24	-.05	-.08
Journalism	43	1.2	.53	.23	.26
Mathematics	109	1.3	.72	.09	.13
Medical Technology	44	1.9	1.40	-.04	.09
Music	92	1.8	.61	.12	.05
Nursing	43	1.8	.37	-.003	.12
Physical Education	155	2.4	.50	.19*	.17*

*Significant at the ninety-five percent level of confidence
**Significant at the ninety-nine percent level of confidence
+Includes only groups of five or more students

Appendix C
Relationship of Semester Grade Point Average
And Library Circulation By Declared Academic Major+ (Continued)

Major	Number of Students	Mean General Collection Circulation	Mean Reserve Collection Circulation	Correlation of GPA To General Collection Circulation	Correlation of GPA To Reserve Collection Circulation
Physical Science	9	2.6	1.7	.53	.28
Physics	8	2.5	1.3	.17	.56
Political Science	21	3.4	1.2	.16	.004
Pre-Dental	7	3.1	.86	.40	.40
Pre-Engineer	13	.76	.23	-.005	-.48
Pre-Law	12	1.2	.25	.28	.17
Pre-Medical	27	1.7	1.0	.30	.15
Pre-Pharmacy	11	.82	1.2	.04	-.01
Pre-Veterinary	17	.82	.53	.24	.39
Psychology	75	3.9	.39	.08	.08
Recreation	40	4.1	1.5	.19	-.09
Secretarial	55	.93	1.2	-.02	.32*
Sociology	41	4.4	.66	.21	.15
Spanish	27	4.9	.59	.40*	.26
Special Education	95	5.2	1.7	.20	.28**
Speech	27	4.3	.30	.19	.32
Speech Pathology	28	6.6	2.0	.42*	.40*
Theatre	22	6.4	.27	.13	-.03
Undeclared	235	1.6	.61	-.001	.09

*Significant at the ninety-five percent level of confidence
**Significant at the ninety-nine percent level of confidence
+Includes only groups of five or more students

Appendix D

Relationship of Semester Grade Point Average
And Library Circulation By Select Groups Of Upperclassmen+

Group	Number of Students	Mean General Collection Circulation	Mean Reserve Collection Circulation	Correlation of GPA To General Collection Circulation	Correlation of GPA To Reserve Collection Circulation
Art					
Junior, Female	15	3.8	.6	-.16	.02
Male	9	2.7	1.0	.45	.12
Senior, Female	12	5.2	.17	-.24	.09
Male	6	7.7	.17	.48	-.07
Biology					
Junior, Female	9	5.6	1.9	-.06	.12
Male	25	1.1	.6	.15	.26
Senior, Female	9	4.3	1.1	-.66	.39
Male	16	2.9	1.4	-.12	-.45
Business Adm.					
Junior, Female	15	1.7	.4	.19	.28
Male	82	1.3	.3	.09	.08
Senior, Female	10	2.4	.6	.51	.34
Male	62	1.8	.22	-.21	.13
Business Ed.					
Junior, Female	10	.6	2.2	-.42	-.18
Senior, Female	10	3.0	.2	.34	.08
Dietetics					
Senior, Female	10	2.7	2.8	.11	-.07
Elementary Ed.					
Junior, Female	60	9.6	1.3	.23	.12
Male	7	3.9	.29	.12	.20
Senior, Female	77	6.1	1.1	.39**	.22
English					
Junior, Female	12	8.8	1.7	-.27	.03
Senior, Female	10	5.2	.1	-.15	-.81**
Male	8	3.3	.75	-.14	-.31

+Includes only groups of five or more students
*Significant at the ninety-five percent level of confidence
**Significant at the ninety-nine percent level of confidence

Appendix D

Relationship of Semester Grade Point Average
And Library Circulation by Select Groups of Upperclassmen+ (Continued)

Group	Number of Students	Mean General Collection Circulation	Mean Reserve Collection Circulation	Correlation of GPA To General Collection Circulation	Correlation of GPA To Reserve Collection Circulation
French					
Junior, Female	6	3.6	0	-.09	0
Geography					
Junior, Male	5	1.8	1.4	.03	.43
Senior, Male	7	8.4	4.8	.03	.29
History					
Junior, Female	5	9.8	5.0	.89*	-.06
Male	17	6.8	.59	-.002	-.08
Senior, Female	7	8.9	2.0	.63	.24
Male	11	8.6	1.1	.05	-.07
Home Economics					
Junior, Female	31	4.1	2.9	.10	.29
Senior, Female	18	6.3	2.9	-.36	-.07
Industrial Education					
Junior, Male	22	.5	.18	.22	.10
Senior, Male	19	1.5	.37	-.32	-.46*
Journalism					
Senior, Female	5	1.2	.6	.28	.80
Mathematics					
Junior, Female	10	1.4	.3	.31	.28
Male	11	1.4	1.5	-.17	.36
Senior, Female	12	.58	.91	.28	.07
Male	27	1.6	.7	.05	.05

+Includes only groups of five or more students
*Significant at the ninety-five percent level of confidence
**Significant at the ninety-nine percent level of confidence

Appendix D

Relationship of Semester Grade Point Average
And Library Circulation by Select Groups of Upperclassmen+ (Continued)

Group	Number of Students	Mean General Collection Circulation	Mean Reserve Collection Circulation	Correlation of GPA To General Collection Circulation	Correlation of GPA To Reserve Collection Circulation
Music					
Junior, Female	14	1.5	1.1	.36	-.26
Senior, Male	8	1.8	.13	-.26	.28
Physical Ed.					
Junior, Female	17	4.9	.53	.34	-.26
Male	13	2.0	.31	.30	-.51
Senior, Female	24	4.5	.67	-.14	.30
Male	16	.94	.81	-.29	.003
Physical Science					
Senior, Male	5	2.8	2.6	-.01	-.32
Political Science					
Junior, Male	10	4.5	1.0	-.59	-.02
Psychology					
Junior, Female	5	2.2	0	.74	0
Male	13	4.5	.08	.28	.22
Senior, Female	7	11.4	1.3	.15	.46
Male	10	1.8	.7	.45	-.13
Recreation					
Junior, Male	13	2.9	.15	.03	-.51
Senior, Female	8	8.3	.50	.25	.17
Male	8	2.8	0	.38	0

+Includes only groups of five or more students
*Significant at the ninety-five percent level of confidence
**Significant at the ninety-nine percent level of confidence

Appendix D

Relationship of Semester Grade Point Average
And Library Circulation by Select Groups of Upperclassmen+ (Continued).

Group	Number of Students	Mean General Collection Circulation	Mean Reserve Collection Circulation	Correlation of GPA To General Collection Circulation	Correlation of GPA To Reserve Collection Circulation
Sociology					
Junior, Female	6	5.5	.67	-.64	.28
Male	6	2.2	1.5	.59	.09
Senior, Male	7	5.1	.71	-.23	.20
Spanish					
Junior, Female	6	4.8	1.7	.84	.40
Special Ed.					
Junior, Female	22	7.0	3.1	.35	.23
Male	5	5.8	2.4	-.03	.20
Senior, Female	14	10.9	2.6	.27	.54*
Speech					
Junior, Female	6	10.2	.5	.48	.66
Senior, Male	7	1.4	.4	.35	.15
Speech Pathology					
Junior, Female	8	10.0	4.0	.39	.33
Senior, Female	9	7.1	1.67	.46	.52
Theatre					
Junior, Female	5	10.0	.4	.14	-.78
Undecided					
Junior, Male	9	1.1	.78	.34	.48
Senior, Female	6	10.2	.33	.05	1.0**

+Includes only groups of five or more students
*Significant at the ninety-five percent level of confidence
**Significant at the ninety-nine percent level of confidence