

THE EFFECTIVENESS OF LIBRARY USAGE
IN A JUNIOR HIGH SCHOOL

BY

VERIS ANDERSON WESSEL

Submitted in partial fulfillment of the requirements
for the Master of Education degree
Montana State College
August, 1962

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
The Problem	2
Procedures	2
Limitations	3
II. REVIEW OF LITERATURE	5
Functions of Junior High School Libraries	5
Montana Library Standards	10
Summary	12
III. ANALYSIS OF A MONTANA JUNIOR HIGH SCHOOL LIBRARY READING PLAN	14
A Junior High School Library Reading Plan	14
Philosophy	16
Opinions of Faculty	17
Selection of Sample Groups	19
Pearson Coefficient of Correlation between Library Usage and Scholastic Achievement	27
Student Questionnaire	28
Interviews to Test Questionnaire	30
Summary	30
IV. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	32
Summary	32
Conclusions	34
Recommendations	35
BIBLIOGRAPHY	36
APPENDIX	38
Scattergrams	39
Pearson Product Moment Ratio Computation	41
Student Questionnaire	42

LIST OF TABLES

Table	Page
1. Ages, Intelligence Scores, and Scholastic Aptitudes of Thirty-one Ninth Grade Boys from Classes 9G and 9F	20
2. Ages, Intelligence Scores, and Scholastic Aptitudes of Thirty-one Ninth Grade Girls from Classes 9G and 9F	22
3. Achievement Test (Iowa) Scores of Thirty-one Ninth Grade Boys from Classes 9G and 9F	24
4. Achievement Test (Iowa) Scores of Thirty-one Ninth Grade Girls from Classes 9G and 9F	25
5. Number of School Library Books Circulated to Students from Classes 9G and 9F	26

CHAPTER I

INTRODUCTION

To pass judgment on the degree of effectiveness of any learning or teaching process presupposes a purpose, an idea of what is good in the development of skills, habits, concepts, appreciations, and interests. In the case of the school library, most educators agree that it should be a laboratory of learning. Their basic assumption is that in the student's search through multiple sources for solutions to his problems, he will assimilate peripheral facts concerning the topic, and in using these facts creatively to arrive at his own conclusions, he is learning in the best sense of the word. Therefore, if the library is functioning according to this premise, there should be tangible evidence in the performance of the students who depend on its services. In the absence of such evidence, it is possible to conclude that the library is ineffective.

The writer has long held the conviction that students can be led to educate themselves beyond the formal demands of a classroom, and that herein lies a solution to the problem of textbook monotony. Uncovering and organizing facts, communicating, and writing can be exciting, and students are sensitive barometers of the effectiveness of that fascinating place, the school library.

This study was an attempt to determine the degree of effectiveness of a junior high school library as reflected in the attitudes and accomplishments of its students.

The Problem

The purpose of this investigation was to determine if there was any significant correlation between scholarship standing and library usage as shown in a sample of two ninth-grade classes in a junior high school. If such a correlation could be shown, it would serve as an indicator of library effectiveness and would suggest one means by which librarians, administrators, and teachers could evaluate their school library operations.

It was also the purpose of this study to reveal evidence which may imply some necessary provisions attached to the administration of a high school library, such as the necessity of planned, guided reading, or a careful integration of library services with the school curriculum.

Procedures

A determination of any reciprocal relation between achievement and library usage is necessarily based upon evidence which is both quantitative and qualitative. Literature was reviewed in order to become acquainted with the scope of the problem and to learn what, if any, suggestions have been made in this area by other investigators. Following this preliminary survey, the method of attack involved these steps:

1. A sample group was selected consisting of two ninth-grade classes of a junior high school. The classes were selected on a basis of scholarship standing, the highest and lowest being represented.
2. Data were collected from school records including each student's age, intelligence quotient, scholastic aptitude, achievement, and number of library books circulated to each during the school term, 1961-1962.

3. A student questionnaire was given to all members of the sample group to determine reading habits and library attitudes.
4. Interviews were arranged with 10% of the sample group as a means of checking the reliability of the questionnaire.

Each step was followed by an analysis of the material to determine its relevance to this study.

Limitations

There were several limitations placed on this study. The review of literature was confined to material which could be found in the Montana State College Library. Another limitation was that the correlations in the study were based upon two ninth-grade classes of sixty-two students from a junior high school in Bozeman, Montana. Observations and the collection of data were made over one school term for the year 1961-1962. Other limitations in this investigation were found to involve some unknowable factors. There was the uncertainty of the reliability of the library reading records. In other words, it did not necessarily follow that a book which was checked out of the library by a student was actually read or comprehended. Student efficiency in library usage is very difficult to assess. There were no statistics available to indicate the number of references a student consulted during a reading period, or how these references related to his special interests or school subjects. The only reliable library records available for this study were those which listed the title, author, and date read of each book circulated to individual students during the school term.

Within these limitations, it was believed that this investigation might bring together findings which could be used as a basis for a more comprehensive study and a re-evaluation of present concepts regarding the role of the school library in education.

The first step in this investigation was to examine the literature, a review of which appears in Chapter 2.

CHAPTER II

REVIEW OF LITERATURE

The problem, as suggested in the title "The Effectiveness of Library Usage in a Junior High School", implied an objective which educators have long sought; to know what constitutes an effective library program and what is necessary to implement it. Authors in the field have made statements and recommendations in formulating criteria which have served as background information and provided a frame of reference for this study. These will be discussed in the following sections.

Functions of Junior High School Libraries

Among the writers who urged the utilization of the library-laboratory to enhance teaching and learning was Resseff of James Madison High School, Brooklyn, New York.¹ He cited what he considered an encouraging growth of the library function during the past two decades of the changing educational scene. The school library, according to Resseff, was first recognized as a great potential in the year 1900 when a qualified librarian was appointed to a school position. In the beginning, the school library, an American contribution, was no more than a place where students obtained books for supplementary reading. In the last few years, however, there have been numerous moves to extend the function of the library to help teachers strengthen their teaching performance. Resseff cited the document entitled "Standards for School Library Programs", pub-

¹Resseff, Martin, The Library in High School Teaching, pp. 7-15.

lished in 1960 by the American Library Association as a guide for teachers who wish to examine their school library in the light of new standards for effective library service.²

Rosseff further stated that at first only the experimental schools accepted the concept of the library as a dynamic materials center. Most schools maintained the conventional pattern of homework, recitation, and tests, with the library serving only as a source for "collateral" reading. But the new way of thinking, with its strong implications for the school library, assumed that (1) the fragmentation of knowledge is undesirable, and (2) that students should take an active role in the learning process. This could suggest that the new teaching should enter into more than one subject field and go beyond the confines of the textbook. This phase of research, reports, and discussions should be the province and responsibility of the school library.³

Many critics, including Cenant, have been concerned about two related defects of the American educational system which curtail excellence and waste resources. These defects are (1) poor articulation and the resulting lack of understanding as to the function of each separate part, and (2) the lack of flexibility to meet the wide differences of ability, interest, and maturity that are found among students of similar age.⁴ Regarding the problem of articulation, Dewey, an early critic of American education said in 1899:

²Ibid., p. 7.

³Ibid., pp. 11-15.

⁴Cenant, James B., The American High School Today, p. 140.

All waste is due to isolation. Organization is nothing but getting things into connection with one another, so that they work easily, flexibly and fully. Therefore in speaking of this question of waste in education, I desire to call your attention to the isolation of the various parts of the school system, to the lack of unity in the aims of education, to the lack of coherence in its studies and methods.⁵

Of special interest to critics has been the problem of how to make the curriculum more flexible through extension of library services. Darling held that such services might include--in addition to the usual circulation of books--audio-visual materials, consultant services, reading guidance, vocational guidance, exhibits, teaching and curriculum planning assistance.⁶ Darling's studies, made for the Pacific Northwest Library Association, were predicated on the assumption that the school library is "an integral part of the intellectual conditioning of the child."⁷

The experts consulted in Darling's study agreed that though the particulars varied, there was a definite and inescapable relationship between a sound educational program and the extent to which library services are used. They also recognized that this potential means for scholastic attainment has not been utilized to its fullest extent, with the result that the child's education has suffered. Darling concluded, "The school library, existing to serve the educational program of the school, is the foundation upon which that program should be built."⁸

⁵Dewey, John, The School and Society, p. 78.

⁶Darling, Richard L., "The Role of the School Library in the Schools of the Pacific Northwest", in Elementary and Secondary School Libraries of the Pacific Northwest, Vol. II., pp. 3-73.

⁷Ibid., p. v.

⁸Ibid., p. 3

There appeared to be general agreement among all sources consulted that a sound educational program served by an effective school library should encourage high achievement on the part of the students. Joyce probed this premise by means of a library-scholastic test given at Lowell State College in Massachusetts.⁹ In his investigation, he described a highly organized junior high school library plan designed to produce students capable of educating themselves beyond the formal demands of the classroom. Tests and a statistical analysis of the plan showed a definite relationship between students' grades and their library usage. A positive correlation of .41 was shown; which, Joyce held, was considered by statisticians to be significant at the .001 level of probability.

Bruner¹⁰ regarded the library as a tool for vicarious experience. He said that books are tools by which the student is given vicarious, yet direct, experiences. Bruner did not approve of dismissing the library as an enrichment center, "since it is obvious that such enrichment is one of the principal objectives of education."¹¹ However, he also warned that "devices themselves cannot dictate their purpose",¹² and that unbridled enthusiasm or fadism overlooks the objective, which is a well-planned, integrated curriculum in which enrichment, including books, becomes an inseparable part of the program.

⁹Joyce, William D., "Student Grades and Library Use", in Junior Libraries, Vol. 7, No. 6, February, 1961.

¹⁰Bruner, Jerome S., The Process of Education, pp. 81-92.

¹¹Ibid., p. 87.

¹²Ibid., p. 88.

In discussing the school library of the future, Grazier¹³ stated that, first of all, teachers and students will expect considerably more from the library than they presently do. Teachers will expect more assistance in planning lessons and curriculum and in doing research. Many teachers will need the library during the summer as well as the winter. Students who are doing accelerated work, as well as students who are in remedial classes, will need the library to implement their activities. All students, according to Grazier, will be encouraged to spend some time browsing in the arts, crafts, and music sections. Grazier said of the school library of the future:

The library will continue to be responsible for reading guidance and library instruction, but its role will be primarily a consultant one in helping to plan and carry through the program in classes. This is not to say that the library will cease helping individual students but rather that both services will be more fully integrated with classroom work—they will grow out of it and lead back into it. The library will strengthen its services in selection, organization, and use of materials through dividing collections into broad subject areas and assigning to each librarians with special subject preparation. The library will furnish materials needed by teachers and counselors for personal and vocational guidance but will discontinue the student assistant organization and other direct guidance and counseling services. The library will cooperate with teachers in experimental use of materials with the handicapped as well as the able reader; the library will experiment with material organization and distribution. It will understand the desirability of district and regional centers and work toward their establishment.¹⁴

The authors cited in this section of the study have shown some definite areas of agreement as to the objectives of an effective school

¹³Grazier, Margaret Hayes, "Implications of the New Educational Goals for School Libraries on the Secondary Level", in New Definitions of School-Library Service, pp. 37-45.

¹⁴Ibid., p. 45.

library. With many of these objectives in mind, the Montana State Board of Education has set forth standards for the accreditation of Montana high school libraries. A statement of the Montana Library Standards appears in the following section.

Montana Library Standards

In order to assess the effectiveness of a Montana junior high school library, it seemed advisable to review standards for Montana high school libraries. To be eligible for accreditation, Montana high schools must meet definite library standards as adopted by the Montana State Board of Education on September 13, 1960. These standards are:

1. Library Guide

The Guide for Montana School Libraries, as developed by the State School Library Committee, and approved by the State Superintendent of Public Instruction and adopted by the State Board of Education, shall be used as a basic guide for library procedures.

2. Persennel and Budget

Persennel requirements and minimum annual expenditure for books and periodicals, including repairs and bindings, shall be:

- a. High schools of fewer than 100 pupils shall employ a part-time teacher-librarian who has a minimum of 9 quarter (6 semester) hours of professional library training. The minimum annual expenditure for books and periodicals shall be \$400.
- b. High schools of 101 to 300 pupils shall employ a part-time teacher-librarian who has a minimum of 12 quarter (8 semester) hours of professional library training. The minimum annual expenditure for books and periodicals shall be \$400 or \$2.50 per pupil, whichever is the greater.
- c. High schools of 301 to 500 pupils shall employ a part-time teacher-librarian who has a minimum of 15 quarter (10 semes-

ter) hours of professional library training. The minimum annual expenditure for books and periodicals shall be \$750 or \$2.00 per pupil, whichever is the greater.

- d. High schools of 501 or more pupils shall employ at least one full-time librarian who is a graduate of an approved library course. The minimum annual expenditure for books and periodicals shall be \$1,000 or \$1.50 per pupil, whichever is the greater.
- e. Proper allowance must be made for library assistants, where necessary.

3. Facilities

- a. Library facilities, adequate for the enrollment of the school, shall be provided. It is recommended that provision be made for a reading room or area, a work room or area, and a conference room or area.
- b. The library shall be open for pupil and teacher use during all periods of the school day, as well as immediately preceding and following regular school hours. The staff shall provide the pupils with instruction in the use of the library.

4. Records

All books shall be properly inventoried and cataloged according to standard library procedures. A shelf list of all titles and a card catalog which includes necessary author, title and subject cards, shall be maintained.

5. Books

- a. The majority of titles in the book collection shall be selected by the library staff, with the assistance of the teaching staff. H. W. Wilson Company's The Standard Catalog for High School Libraries and Children's Catalog, and the American Library Association's Basic Book Collection for High Schools and Basic Book Collection for Junior High Schools are recommended as guides to a basic collection.
- b. A balanced distribution of titles in all classifications, of which not more than 20 per cent shall be fiction, shall be maintained.
- c. The minimum number of titles and volumes, exclusive of government documents and textbooks, required by enrollment categories, is:

- 1) 100 or fewer pupils.....1000 volumes including 800 titles
- 2) 101-300 pupils.....1500 volumes including 1200 titles
- 3) 301-500 pupils.....2500 volumes including 2000 titles
- 4) 501-1000 pupils.....4000 volumes including 3000 titles
- 5) Over 1000 pupils.....6000 volumes including 3000 titles

6. Periodicals

- a. Periodicals should be selected so as to represent, as nearly as possible, all subject areas. Proper storage and filing space shall be provided for current and back copies of periodicals. Periodicals to fulfill minimum requirements (see b. below) must be selected from those included in the Abridged Readers' Guide to Periodic Literature (H. W. Wilson Company). The Readers' Guide or the Abridged Readers' Guide is standard equipment for a school library.
- b. In addition to one or more daily metropolitan newspapers and one or more local newspapers, by enrollment categories the minimum number of periodicals for pupil use is:
 - 1) 100 or fewer pupils.....10 periodicals
 - 2) 101-300 pupils.....15 periodicals
 - 3) 301-500 pupils.....20 periodicals
 - 4) 501-1000 pupils.....30 periodicals
 - 5) Over 1000 pupils.....40 periodicals
- c. A list of all periodicals provided shall be submitted with the annual report to the Department of Public Instruction.¹⁵

Summary

At the beginning of this chapter, functions of junior high school libraries, as seen by various authors, were considered and some general agreement on what constitutes an effective library was in evidence. All sources consulted in this study favored the extension of the library function. They agreed that fragmentation of knowledge was undesirable, that students should take an active role in the learning process, that articu-

¹⁵Montana State Board of Education, Standards for Accreditation of Montana High Schools, pp. 7-9.

lation is generally poor in most systems, and that school curriculums should be more flexible than they now are if they are to meet the wide differences that exist among students of similar age. They believed that the library should be a learning laboratory with materials available to all students. The experts generally agreed that there was a strong relationship between a sound educational program and the extent of library usage, and that this should, logically, encourage higher achievement on the part of the students.

Bruner regarded the library as a device for vicarious experience, considering the library as much more than an enrichment center. The library of the future was seen by Grazier as considerably more important to the curriculum than it is at present, with both teachers and students demanding extended services.

A Bozeman, Montana junior high school library reading plan is reviewed in the following chapter, together with findings based on a study of two ninth-grade classes which deal with the correlation between library usage and achievement.

CHAPTER III

ANALYSIS OF A MONTANA JUNIOR HIGH SCHOOL LIBRARY READING PLAN

The functions of junior high school libraries in general, as seen by various sources and the particular Montana Library Standards, as set forth in Chapter 2, served as a guide to establish what could be expected to constitute an effective school library. In Chapter 3, the Bezeman, Montana junior high school library plan was analyzed to determine how well it met the criteria cited in Chapter 2.

A Junior High School Library Reading Plan

The library reading plan for a junior high school in Bezeman, Montana,¹⁶ was based on scheduled library periods of one hour each to be spent in free reading. Classes of seventh and eighth grade students were scheduled for two or three hours per week, depending on the individual schedules. They were not allowed to come to the library during any other periods. Ninth grade students were not scheduled, but individuals were allowed to come to the library during any period of the day to do research work if they could show a "Library Slip" signed by the teacher. The periods usually utilized by ninth grade students were the first and second study-hall periods of the day and the seventh, or last period of the day, spent in the homeroom.

The library hours were from 8:15 A.M. until 4:40 P.M., with class

¹⁶ Except where otherwise noted, the information in this section is based on the writer's experience as assistant-librarian in the school being studied.

groups scheduled from 8:30 A.M. until 3:45 P.M. One full-time professional librarian and one half-time teacher-librarian were employed. Two or three student assistants from each class were trained to work at the check-out desk and to shelve books. Some teacher help was utilized for one group each morning to help discipline the larger groupings.

Facilities were provided for a general reading room, a work room, and a conference room, though only the first was utilized. The standards of the State of Montana were met in all respects, including 4,000 volumes and 3,000 titles. Periodicals were supplied, there being approximately twenty-five titles available.

Students were strictly disciplined during library periods, and a rigid plan of book selection and check out procedure was followed. A library handbook set forth the rules and regulations, which included small fines and time served after school for overdue books. Lost books were paid for by the student, and until the fine was paid, no library privileges were granted to that student.¹⁷

¹⁷Library Handbook for Willson Junior High School, Bozeman, Montana, 1961.

Several class groups came to the library at the same time, which meant that there would often be as many as 100 students reading at the tables or browsing for books in the stacks. Students were unsupervised in their reading, but were rigidly disciplined. They were not allowed to use the library period for study of class work; nor were they allowed to talk, whisper, or wander around the room. They were required to read the book of their choice, doing research work only by authority of the classroom teacher.

The professional librarian was unable to do reference work during these periods, her time being absorbed by the tasks ancillary to keeping order in a room of from 50 to 120 adolescents. Reference work was necessarily restricted to very small groups or after-school hours.

A reading record system was employed which kept an up-to-date account of all books checked out by students. Each student had a personal file card with his name, grade, and class number typed at the top. Under this, all titles of books read were listed chronologically by author, title, and classification. Student assistants kept these records daily from the charge-cards as part of their library duties and training.

Philosophy. The junior high school reading plan was based on the premise that students will read if offered time and sufficient materials of interest on their appropriate levels of difficulty. Students were given the freedom to read any book of their choosing without reading supervision. This was thought to be an incentive to self-help. Extensive browsing was prohibited on the belief that students were prone to waste time in this manner. Order and quiet were considered most important to a healthy reading atmosphere and the fines system was thought to create

respect in the student for the physical book.

The reading records were considered valuable, not only as teacher helps in assessing the students' reading progress, but in creating an interest in the student to establish a record for his self evaluation and to develop a pride in his reading accomplishment.

Opinions of Faculty. In an attempt to determine the general opinion of the library reading plan, ten experienced teachers in the junior high school system were interviewed.¹⁸ The following questions and replies gave some indication of the opinions held:

1. Do you agree that students will read if offered time and sufficient materials of interest on their appropriate levels of difficulty? Reply: Yes, 4; No, 6.

2. Do you think that library reading should be supervised? Reply: Yes, 7; No, 3.

3. In your opinion, should the library encourage browsing in the stacks? Reply: Yes, 9; No, 1.

4. Do you think the library should be absolutely quiet for study purposes? Reply: Yes, 6; No, 4.

5. Do you approve of the fines system? Reply: Yes, 9; No, 1.

6. Do you consider the library reading records worth the time and effort spent to keep them current? Reply: Yes, 9; No, 1.

7. Are you satisfied with the time schedule for library use? Reply: Yes, 2; No, 8.

¹⁸Of the ten teachers interviewed, 4 taught English, 2 taught social studies, 1 taught music, 1 taught art, and 2 taught science and mathematics.

8. Are you generally satisfied with the materials available in the school library? Reply: Yes, 9; No, 1.

9. Do you assist the librarian in the selection of the library materials? Reply: Yes, 4; No, 6.

10. Would you like to have more assistance from the professional librarian in planning lessons and assignments? Reply: Yes, 10; No, 0.

11. Are you satisfied with the amount of reference help your students get? Reply: Yes, 2; No, 8.

12. Do you think that you give your classes sufficient information regarding use of the library? Reply: Yes, 2; No, 8.

13. Would you expect to find a positive correlation between scholastic standing and library usage? Reply: Yes, 10; No, 0.

14. Have you ever taken (not sent) your classes into the library for special work? Reply: Yes, 0; No, 10.

15. Do you often send your classes into the library to do research work? Reply: Yes, 2; No, 8.

16. Do you really believe in the school library as a necessity in the education process? Reply: Yes, 10; No, 0.

These replies suggested some definite strengths and weaknesses in the junior high school library reading plan. The basic assumption of the library, that students will read if offered time and materials, was questioned. Seven out of ten teachers consulted thought the reading activity should be supervised. Nine of the ten encouraged browsing in the stacks, and eight out of ten were dissatisfied with the time schedule. All teachers felt they needed more of the librarian's time to help plan

lessons and prepare assignments; and eight out of ten thought that their students were not receiving enough librarian attention. Though all teachers had confidence in the potential of the library, none had taken entire classes into the library to do research work; and eight of the ten felt that they had given inadequate library training to their classes.

Interviews with the ten faculty members revealed that criticisms were not generally voiced to the administration. There was an acceptance of existing practices based on the conviction that uncontrollable circumstances, including budget of time and money, governed the administration of the library. Nevertheless, all teachers consulted felt that the library service in their school was limited in scope and flexibility.

On the assumption that effectiveness might be revealed in a correlation of library usage and scholastic standing, two groups of ninth grade students were selected as samples.

Selection of Sample Groups

A sample group of sixty-two ninth-grade students was selected from the Bezman junior high school for this study. The two classes, one academically high (9F) and the other low (9G), represented the extremes at the grade level of the school.

Listed in Table 1 are the individual ages, intelligence scores, and scholastic aptitudes of thirty-one ninth-grade boys. Numbers have been assigned to individual students and represent an alphabetical order of names. The prefixed G or F represents the class designation. Age is given in years and months at the time of testing. An asterisk

TABLE 1. AGES, INTELLIGENCE SCORES, AND SCHOLASTIC APTITUDES OF THIRTY-ONE NINTH GRADE BOYS FROM CLASSES 9G AND 9F

Student Number	Age		Intelligence Quotient	Scholastic Aptitude (D.A.T.) Score
	Years	Months		
G1	14	1	115	33
G2	14	4	111	44
G3	14	3	102	27
G4	14	8	98	28
G5	15	1 *	102	22
G6	15	5 *	75	9
G7	14	4	106	27
G8	15	1 *	102	34
G9	15	2 *	83	12
G10	14	1	94	30
G11	15	6 *	91	25
G12	14	6	119	39
G13	15	2	93	26
G14	14	8	111	30
G15	15	7 *	100	33
Mean	14	9.5	100.3	28
F1	14	10	111	56
F2	14	3	135	62
F3	14	8	122	58
F4	15	0	130	76
F5	14	8	117	56
F6	14	4	127	55
F7	14	0	143	75
F8	14	9	115	50
F9	14	7	123	57
F10	14	5	126	60
F11	14	10	105	44
F12	14	1	124	51
F13	14	4	118	57
F14	14	10	123	74
F15	14	6	114	48
F16	14	8	117	49
Mean	14	6.6	124	58

* Repeated an earlier grade

after the age indicates that the student has repeated an earlier grade.

The measurable mental abilities were determined through the Otis Quick-Scoring Mental Abilities Tests, Gamma Test, Form EM for high schools and colleges. In this sampling, where the educational opportunities were approximately the same for all, it was assumed that the measured mental abilities were reasonable accurate.¹⁹

The scores listed in Table 1 were derived from the Differential Aptitude Tests of the Psychological Corporation for measuring abilities for purposes of guidance.

Table 2 is similar to Table 1, and lists the ages, intelligence scores, and scholastic aptitudes of thirty-one ninth-grade girls.

The two classes, 9G and 9F, were of the same size, and there was no appreciable difference in their ages; the 9G boys were slightly older than the 9F, and the 9F girls were slightly older than the 9G.

The I.Q. ratings of the two classes varied considerably. The 9F medians were higher, as were the means. However, the 9G class showed greater I.Q. range for both boys and girls than did the 9F class. The wide I.Q. ranges of 75-119 for the 9G boys and 98-134 for the 9G girls were considerably higher than the corresponding 9F ranges of 105-143 for boys and 112-132 for girls. The wide I.Q. range for the 9G boys was radically influenced by the single low score of 75. The wide range for

¹⁹A measure of a student's brightness, called an Intelligence Quotient, is sometimes found by dividing the student's Mental Age by his Chronological Age. A measure of brightness of a pupil comparable to an intelligence quotient (I.Q.) obtained on the Stanford-Binet Scale may be found by comparing his score in the Gamma Test (EM) with the norm for his age. This measure is not actually a quotient, but it is called an "I.Q." because it has the same significance as an I.Q.

TABLE 2. AGES, INTELLIGENCE SCORES, AND SCHOLASTIC APTITUDES OF THIRTY-ONE NINTH GRADE GIRLS FROM CLASSES 9G AND 9F

Student Number	Age		Intelligence Quotient	Scholastic Aptitude (D.A.T.) Score
	Years	Months		
G1	14	6	100	31
G2	14	10	102	20
G3	14	5	98	8
G4	14	1	106	36
G5	14	9	120	45
G6	15	2 *	107	36
G7	14	4	108	45
G8	14	5	101	38
G9	14	11	103	26
G10	14	5	98	28
G11	14	4	115	53
G12	14	10	124	41
G13	14	8	134	65
G14	14	1	122	51
G15	14	6	123	51
Mean	14	6.6	116	38.3
F1	14	10	129	64
F2	14	11	119	46
F3	14	5	132	61
F4	14	10	131	65
F5	14	6	116	53
F6	14	4	126	59
F7	14	11	132	50
F8	15	0	128	69
F9	14	9	119	55
F10	14	0	121	38
F11	14	4	114	48
F12	14	8	128	69
F13	14	9	128	67
F14	15	0	128	45
F15	14	8	119	57
F16	14	11	112	39
Mean	14	8.1	122	55.3

* Repeated an earlier grade

the 9G girls was likewise influenced by the single high score of 134.

The information in Tables 1 and 2 revealed the general characteristics of the sample. Achievement test results for each student in the two classes are shown in Tables 3 and 4. The measures of achievement for the groups were based on the Iowa Tests of Educational Development. Standard scores were calculated for each student from classes 9G and 9F. This information is presented in Table 3 and Table 4. Scores were listed for (1) Basic Social Concepts, (2) Background Natural Science, (3) Correctness of Expression, (4) Quantitative Thinking, (5) Interpretation--Social Studies, (6) Interpretation--Natural Sciences, (7) Interpretation--Literature, (8) General Vocabulary, (1-8) Composite Score, Tests 1-8, and (9) Use of Sources of Information.

It was believed by the writer that if the library were functioning as an effective learning laboratory, then the standard scores might have some relation to the frequency of library use. To determine if a correlation existed between these factors, the numbers of school library books circulated to the students from classes 9G and 9F during the school term 1961-1962 were compared with scholastic achievement. The figures on books circulated were taken from the library reading records which were logged daily by the student assistants, for the librarian, and are listed in Table 5.

From the standard scores, as listed in Tables 3 and 4, and the numbers of books read, as listed in Table 5, the Pearson Product Moment Ratio was determined.

TABLE 3. ACHIEVEMENT TEST (IOWA) SCORES OF THIRTY-ONE NINTH GRADE BOYS FROM CLASSES 9G AND 9F

Student Number	Standard Scores for Test Number:								
	* 1	2	3	4	5	6	7	8	1-8
G1	19	23	15	23	22	17	17	13	25
G2	19	21	15	23	9	16	13	13	17
G3	11	13	11	16	7	9	12	11	12
G4	12	16	10	14	10	7	11	13	12
G5	12	24	14	17	11	7	9	16	14
G6	1	5	1	3	9	9	4	8	2
G7	15	16	13	16	11	6	13	10	13
G8	20	24	12	17	18	15	16	18	18
G9	6	13	7	9	7	8	1	6	6
G10	13	16	12	10	10	1	5	13	10
G11	11	15	8	12	8	2	7	11	9
G12	18	22	16	24	16	16	19	15	19
G13	5	15	12	10	10	10	8	7	10
G14	20	18	19	14	18	15	17	23	19
G15	13	16	14	16	16	12	14	7	14
F1	27	24	21	28	21	25	25	19	25
F2	24	29	24	22	25	25	20	26	27
F3	28	26	24	25	20	17	15	17	23
F4	27	29	28	29	25	32	24	26	32
F5	26	28	21	21	23	25	15	19	24
F6	31	28	21	25	28	26	25	24	30
F7	30	30	27	33	30	31	26	26	35
F8	23	26	20	29	25	25	22	19	25
F9	24	25	22	28	27	19	21	21	25
F10	28	24	23	30	26	23	23	18	27
F11	26	27	20	28	20	21	15	17	23
F12	24	25	20	25	21	22	20	19	23
F13	23	27	20	28	18	22	18	17	23
F14	28	26	25	27	24	24	24	19	27
F15	23	24	23	24	23	25	21	23	25
F16	29	25	21	23	18	27	17	16	23

- *1. Basic Social Concepts
 2. Background Natural Science
 3. Correctness of Expression
 4. Quantitative Thinking
 5. Interpretation- Social Studies

6. Interpretation- Natural Science
 7. Interpretation- Literature
 8. General Vocabulary
 1-8 Composite Score Tests 1-8
 9. Use of Sources of Information

TABLE 4. ACHIEVEMENT TEST (IOWA) SCORES OF THIRTY-ONE NINTH GRADE GIRLS
FROM CLASSES 9G AND 9F

Student Number	Standard Scores for Test Number:									
	* 1	2	3	4	5	6	7	8	1-8	9
G1	10	9	10	8	8	4	9	7	7	13
G2	12	16	13	13	12	7	15	9	12	13
G3	8	6	8	10	10	10	8	7	8	10
G4	14	16	15	13	13	16	16	14	15	16
G5	23	26	25	24	26	25	19	23	26	25
G6	11	15	15	12	11	15	14	16	14	13
G7	11	15	15	13	14	11	11	12	13	15
G8	10	20	19	13	13	8	12	14	14	8
G9	13	14	13	10	13	8	17	10	13	15
G10	13	17	13	13	12	12	15	10	14	12
G11	22	22	24	20	20	18	27	22	23	17
G12	15	23	19	13	16	12	16	17	17	17
G13	27	26	25	29	28	30	27	26	32	25
G14	21	25	20	20	20	22	19	19	22	21
G15	24	23	23	24	24	20	26	20	25	19
F1	28	28	26	25	27	30	26	29	32	27
F2	23	25	17	20	23	24	20	18	23	20
F3	23	25	23	23	23	23	24	24	25	27
F4	32	28	23	28	31	32	27	31	34	29
F5	20	23	23	23	21	25	19	19	23	23
F6	31	26	24	23	26	24	28	27	30	25
F7	29	26	28	24	27	28	26	29	31	25
F8	30	24	22	25	25	26	24	26	28	23
F9	20	24	25	17	19	18	18	22	22	21
F10	20	21	23	18	23	21	18	19	22	22
F11	22	18	21	17	19	21	20	19	21	18
F12	26	26	22	22	28	28	25	21	27	26
F13	28	26	24	23	26	25	27	27	29	25
F14	20	26	28	20	26	27	28	25	28	25
F15	23	21	23	24	26	25	24	22	25	23
F16	20	24	23	20	18	19	18	18	21	24

- *1. Basic Social Concepts
- 2. Background Natural Science
- 3. Correctness of Expression
- 4. Quantitative Thinking
- 5. Interpretation- Social Studies

- 6. Interpretation- Natural Science
- 7. Interpretation- Literature
- 8. General Vocabulary
- 1-8 Composite Score Tests 1-8
- 9. Use of Sources of Information

TABLE 5. NUMBER OF SCHOOL LIBRARY BOOKS CIRCULATED TO STUDENTS FROM
CLASSES 9G AND 9F

Boys				Girls			
9G		9F		9G		9F	
G1	9	F1	16	G1	25	F1	33
G2	24	F2	10	G2	42	F2	0
G3	38	F3	5	G3	30	F3	15
G4	21	F4	28	G4	20	F4	4
G5	2	F5	15	G5	36	F5	14
G6	28	F6	14	G6	28	F6	16
G7	3	F7	26	G7	29	F7	0
G8	47	F8	3	G8	25	F8	30
G9	22	F9	7	G9	48	F9	15
G10	10	F10	8	G10	9	F10	25
G11	5	F11	8	G11	7	F11	33
G12	9	F12	13	G12	23	F12	3
G13	8	F13	8	G13	38	F13	9
G14	8	F14	23	G14	21	F14	8
G15	5	F15	11	G15	13	F15	10
		F16	10			F16	5

Pearson Coefficient of Correlation between Library
Usage and Scholastic Achievement

To determine the relation of library usage to scholastic achievement, a ratio of correlation was computed, using the Pearson Product Moment Ratio formula.²⁰

Correlations were computed on each of the two composite groups, 9G and 9F, with a resultant ratio of +0.0832 for the 9G boys and girls, and a ratio of +0.184 for the 9F boys and girls. These positive ratios were not, according to statisticians, meaningful at any level of significance. However, it can be noted that the positive ratio was higher for the higher-achieving 9F class.

The low ratios which resulted from the data could possibly indicate that (1) the library was not performing to a degree of effectiveness that could be measured in a tangible way through the performance of its students, that (2) there was no actual correlation between library usage and student achievement, or that (3) there were not sufficient records or statistics available from which to determine a significant ratio.

In order to bring the problem into sharper focus, it was thought that the students themselves would have opinions of value to this study. The results of a student questionnaire are discussed in the following section.

²⁰Dewnise, N. M. and Heath, R. W., Basic Statistical Methods,
p. 87.

Student Questionnaire

A questionnaire to gain information which was otherwise inaccessible to the investigator was circulated to each of sixty-two students in the 9G and 9F sample groups. Students were allowed to take the questionnaires home and return them the next day. Most chose to complete them during free periods at school, and all sixty-two questionnaires were returned. Some of the findings from the questionnaires were:

1. Forty-six students learned to read at the age of six or younger.
2. Forty-two students replied that there was a family book collection available to them.
3. Forty students said they used the city library regularly.
4. Thirty-three students claimed to understand the Dewey Decimal System.
5. Eighteen students said they did not prefer illustrated books to plain print.
6. Thirty-nine students thought that the library had helped them to become better students.
7. Thirty students said they read books to be entertained; eighteen said they read to be informed; twelve said they read to kill time.
8. Forty students bought books with their own spending money.
9. Forty-one students said they did most of their reading at home.

Students were instructed to turn the questionnaire over and

write on the back if they had any additional comments. Only criticisms were written, and these were very similar in nature. An illustrative selection of ten of the statements is quoted below.

I feel that when I go in the library I want to find my own book and not have anybody leaning over my shoulder.

In the library I might like a little more help on finding a particular book but I would like to be able to browse also.

It would be nice to have someone there to help you if you need it but browsing is still the best way. One week is plenty of time to read if extra time is needed renew it.

I don't know how to use the library any better now than when I first came in 7th grade. I think we should have a test on using one. I think the library should get more dog books. I think they should very definitely teach us how to use the library and the Dewey Decimal System. I think (on the whole) we depend on the teachers to do the work. I think more people should use the library. I would prefer to use the library myself. (If someone would teach us).

I enjoy reading very much but seem to have very little time to read with school work and such. I don't use the school library much because it's always during study halls and I only have three a week.

I don't know enough about the library to browse around and find it myself. I think there should be more help to the students. I feel a week is enough to read a library book.

I love to browse in the library but here you have to get a book and leave. When you leave your book at home and it is due I don't think we should have to stay after school and pay a fine at the same time.

I think our library needs more books that are more mature and challenging instead of the kind of childish (?) ones we have now. I would rather browse around just looking--but help should be available if it is needed.

When I go into the library I usually don't know where to look. I think there should be an easier way to find books.

I think you should have more time to pick your book, instead of being pushed at something you don't want.

These statements revealed that the students shared several quali-

tative judgments with the teachers. Examples of this were the dissatisfaction with the amount of time given them for library instruction, and the prohibition to browse through the stacks.

Interviews to Test Questionnaire

The ten students whose comments were selected were called in for an informal interview. The purpose of this spot interview was to check the possibility that the respondent may have answered unthinkingly in haste, or that he may have used the questionnaire to vent negative feelings unrelated to this study. The student was first asked questions of a general nature to determine his attitudes toward school and the library in particular.

Of the ten students interviewed, all except two were generally satisfied with the junior high school, the curriculum, and the teachers, but not one of them was entirely satisfied with the school library. In all cases, the interview strengthened what had previously been written on the questionnaire.

Summary

In Chapter 3, an analysis of the Bezman, Montana, junior high school library reading plan determined that it satisfactorily met the minimum needs of its students, though no definite provision for enrichment was evident.

In interviews with ten faculty members, various strengths and weaknesses were pointed out. The assumption that students will read if

provided sufficient time and materials was questioned by six members.

A Pearson Coefficient of Correlation between library books read and standard performance scores of two classes of ninth-grade students was computed. The results were positive for both classes, but were not considered meaningful at any level of significance.

A student questionnaire was administered which revealed reading habits and attitudes, and reflected some general dissatisfactions with the school library. Interviews were arranged with ten students, chosen at random from the sample groups, in an attempt to test the questionnaire. The result indicated that the students had answered carefully and honestly and to the best of their abilities.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

It has been the purpose of this investigation to search for means of measuring the effectiveness of school library usage. A review of available literature sought to determine how seven eminent educators evaluated an effective library program, and an attempt was made to determine any significant correlation between scholarship standing and library usage that could be shown in a sample of two ninth-grade classes of a junior high school in Bozeman, Montana.

It was also hoped that the study would reveal evidence, in the form of reviews and opinions, as to the effectiveness of the junior high school library with possible implications for the teachers, librarians, and administrators who formulate library policy.

Summary

Marked agreement was found in the literature as to the objectives sought, and in the evaluation of existing practices. All sources consulted favored the extension of the library function. They agreed that students must be encouraged to take an active role in the learning process, that articulation is generally poor in most systems, and that flexibility of the curriculum is necessary for learning in depth. All agreed that individual differences must be met through effective use of materials, and that these materials should be available to all students. The experts generally agreed that there was a strong relationship between a sound educational program and the extent of library use.

An analysis of the junior high school library reading plan indicated that it satisfactorily met the Montana state library standards. The philosophy behind the plan's operation appeared to be based on the conviction that students will read if offered time and sufficient materials of interest on their appropriate levels of difficulty.

Browsing was prohibited in the library, discipline was strict, and no provision for what educators call enrichment was evident.

Ten members of the junior high school faculty were consulted to determine if a general opinion of the library reading plan existed. Some definite weaknesses were pointed out, including the inability to browse, the lack of sufficient help from the librarian, and the tight time schedule. Most teachers accepted the weaknesses as unavoidable. The assumption of the library reading plan--that students will read if offered sufficient time and materials--was questioned by six of the ten members interviewed.

In an attempt to determine the correlation between library usage and scholastic standing, two groups of ninth-grade students were chosen as samples. Records of age, I.Q., aptitude, achievement, and number of library books read during the term were compiled for each student. A Pearson Coefficient of Correlation between the library books read and the standard performance scores was computed. Positive ratios of 0.184 and 0.0832 resulted for the 9F and 9G groups respectively. These ratios were not meaningful at any level of significance.

The next step in this study was a student questionnaire, administered to all sixty-two members of the sample groups. In addition to

answering the questions asked, the students were invited to write any comment on the back of the sheet. These comments revealed similar dissatisfactions, the most common being the prohibition to browse through the stacks and the lack of assistance from teachers and librarians.

A test of the questionnaire was made by means of an interview with ten students whose questionnaires had been selected at random. This check revealed that they had answered honestly and carefully and to the best of their abilities.

Conclusions

From this study, the writer has made the following conclusions:

1. The school library should be a learning laboratory where the student is an active participant in the learning process.
2. Improvement in library function should begin with the teachers.
3. A one-hundred per cent return on a questionnaire to sixty-two ninth-grade students in regard to library usage suggested that student opinions are important.
4. A quantitative analysis of library effectiveness is difficult to determine.
5. Although the Bozeman, Montana, junior high school library met minimum standards, its philosophy limited effectiveness as a learning laboratory, the functions of which were outlined in the Review of Literature.

The findings of this investigation have led the writer to con-

clude that the effectiveness of library usage in any junior high school depends upon an enlightened faculty and administration who can envision the library as the center from which to stimulate reading, acquire information, create vicarious experiences, and make the students' school life a pleasant image of youth.

Recommendations

The results of this study have revealed evidence which could lead to further studies in depth and scope of the problems of measuring and implementing effective library practices in junior high school libraries. It is recommended that further study be made of the problem.

The questionnaire and interviews regarding junior high school library practices suggested that consideration should be given to a two-pronged approach to school problems by faculty and students.

BIBLIOGRAPHY

BIBLIOGRAPHY

- Branscomb, Harvie, Teaching With Books, Chicago: American Library Association, 1940. 120 pp.
- Bruner, Jerome S., The Process of Education, Cambridge: Harvard University Press, 1961. 92 pp.
- Conant, James B., The American High School Today, New York: McGraw-Hill Company, 1959. 140 pp.
- Darling, Richard L., "The Role of the School Library in the Schools of the Pacific Northwest", in Elementary and Secondary School Libraries of the Pacific Northwest, Vol. II, Seattle: University of Washington Press, 1960. 322 pp.
- Dewey, John, The School and Society, Chicago: University of Chicago Press, 1899. 78 pp.
- Downie, N. M. and Heath, R. W., Basic Statistical Methods, New York: Harper and Brothers, 1959. 289 pp.
- Fenwick, Sara Innis, (editor) New Definitions of School-Library Service: Papers Presented before the Twenty-fourth Annual Conference of the Graduate Library School of the University of Chicago, Chicago: University of Chicago Press, 1959. 90 pp.
- Joyce, William D., "Student Grades and Library Use", in Junior Libraries, Vol. 7 No. 6, February, 1961. 8 pp.
- Rosseff, Martin, The Library in High School Teaching, New York: The H. W. Wilson Company, 1961. 161 pp.
- Standards for Accreditation of Montana High Schools, Montana Department of Public Instruction, Helena, Montana, 1960. 12 pp.
- Witty, Paul, Reading in Modern Education, Boston: D. C. Heath and Company, 1957. 202 pp.

APPENDIX

SCATTERGRAM: COMPOSITE GROUP OF 96 BOYS AND GIRLS

BOOKS READ

		BOOKS READ																f	4'	f4'	f4'x4'						
STANDARD SCORE		30-32	27-29	24-26	21-23	18-20	15-17	12-14	9-11	6-8	3-5	0-2	30-32	27-29	24-26	21-23	18-20	15-17	12-14	9-11	6-8	3-5	0-2				
30-32	10																										
27-29	9																										
24-26	8				1																						
21-23	7					1																					
18-20	6								11																		
15-17	5						1																				
12-14	4	1	11						1	1			1						1								
9-11	3		1	1																3	3	9	27	18			
6-8	2									1					1					3	2	6	12	50			
3-5	1																			0	1	0	0	0			
0-2	0																			1	0	0	0	0			
		f	1	3	3	4	1	0	1	4	3	3	1	2	0	1	1	1	1	N=	30	Σ=	138	Σ=	760	Σ=	938
		x'	0	1	2	3	4	1	0	5	6	7	8	9	10	11	12	13	14	15	16	Σ=	199	Σ=	760	Σ=	938
		fx'	0	3	6	12	12	4	0	6	28	24	27	10	11	24	0	14	15	16	Σ=	199	Σ=	760	Σ=	938	
		fx' ²	0	3	12	36	16	0	36	196	192	192	243	100	121	288	0	196	225	256	Σ=	1908	Σ=	760	Σ=	938	

STANDARD COMPOSITE SCORE

$$\Sigma fx' = 199$$

$$\Sigma fx'^2 = 1908$$

$$\Sigma f4' = 138$$

$$\Sigma f4'^2 = 760$$

$$\Sigma x'4' = 938$$

$$r = 0.0832$$

SCATTERGRAM: COMPOSITE GROUP OF 9F BOYS AND GIRLS

40

BOOKS READ															
0-2	3-5	6-8	9-11	12-14	15-17	18-20	21-23	24-26	27-29	30-32	33-35	36-38	39-41	42-44	
f	f'	f'	f'	f'	f'	f'	f'	f'	f'	f'	f'	f'	f'	f'	f'
35	14							1							1
34	13														1
33	12														0
32	11								1						2
31	10														1
30	9														2
29	8														1
28	7									1					2
27	6														4
26	5														0
25	4														6
24	3														1
23	2														7
22	1														2
21	0														2
f	2	5	5	5	5	5	0	1	2	1	2	0	0	0	N=32
x'	0	1	2	3	4	5	6	7	8	9	10	11	12	13	
fx'	0	5	10	15	20	25	30	7	16	9	10	22	0	0	Σfx'
fx' ²	0	5	20	45	48	125	0	49	128	81	100	242	0	0	Σfx' ²

$$\Sigma x'y' = 748$$

$$r = 0.184$$

$$\Sigma fx'^2 = 843$$

$$\Sigma fy'^2 = 1310$$

$$\Sigma fx' = 131$$

$$\Sigma fy' = 166$$

STANDARD COMPOSITE SCORE

PEARSON PRODUCT MOMENT RATIO COMPUTATION
Sample of Girls' Group in Class 9F

x	y	x ²	y ²	xy
32	33	1024	1089	1056
23	0	529	0	0
25	15	625	225	375
34	4	1156	16	136
23	14	529	196	322
30	16	900	256	480
31	0	961	0	0
28	30	784	900	840
22	15	484	225	330
22	25	484	625	550
21	33	441	1089	693
27	3	729	9	81
29	9	841	81	261
28	8	784	64	224
25	10	625	100	250
21	5	441	25	105
$\Sigma = 421$	220	11337	4900	5703

$$r = \frac{N \Sigma xy - (\Sigma x)(\Sigma y)}{\sqrt{[N \Sigma x^2 - (\Sigma x)^2][N \Sigma y^2 - (\Sigma y)^2]}}$$

$$r = \frac{16(5703) - 421(220)}{\sqrt{[16(11337) - (421)^2][16(4900) - (220)^2]}}$$

$$r = \frac{91248 - 92620}{\sqrt{[181392 - 177241][78400 - 48400]}} = \frac{-1372}{\sqrt{4151(30000)}}$$

$$r = \frac{-1372}{\sqrt{124530000}} = \frac{-1372}{11159} = -0.123$$

STUDENT QUESTIONNAIRE

To The Student: Please answer these questions as accurately as you can. Your statements will not affect you in any way and no grade is involved.

1. At what age did you learn to read? _____
2. Do you have either a family or a personal book collection? _____
3. Do you use the City Library? _____
4. Do you understand the Dewey Decimal System? _____
5. Approximately how many books do you borrow from the school library in one month? _____
6. Do you enjoy browsing in a library? _____
7. Do you ever buy books with your own spending money? _____
8. Where do you usually do most of your reading? _____
9. Is reading a difficult task for you? _____
10. Do you read every day, every week, or just occasionally? _____
11. Generally, do you read to be informed, to be entertained, or simply to kill time? _____
12. Do you read newstand comic books? _____
13. Do you prefer illustrated (pictured) books to plain print? _____
14. Has reading on your own helped you in your school work? _____
15. Have the library reading periods helped you to become a better student? _____

If you have other comments, suggestions, compliments, or complaints, turn this sheet over and write them on the back.