AN INVESIIGAIION OF THE REXAHTIONSHIP BEIWEEN QUATITAIIVE AND QUANIITTAIIVE STANDARDS AND THE SIUDENIS KNOWLEDGE OF THE USE OF BOCKS AND ITBRARIES by

## ETSIE BARBARA IOUISE WAGNER

B. Ed., University of British Columbia, 1962

A THESTS SUBMITIED IN PARITIAL FULFTIMENT OF THE REQUIRENENIS FOR THE DEAREE OF

MASIER OF ARIS
in the Faculty
of
EDUCAMICN

We accept this thesis as conforming to the required standard

THE URIVERSIITY OF BRIPISH COIUMBLA
December, 1965

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the Head of my Department or by his representatives. It is understood that, copying or publication of this thesis for financial gain shall not be allowed without my written permission 。

The University of British Columbia, Vancouver 8: Canada

Date $\alpha$ evesretien 1965

## TABIE OF CONIENIS

CHAPIER PAGE
I. STATENENI OF THE PROBTEM AND DEFINITION OF TERMS USED. ..... 1
The Problem ..... 6
Statement of the problem ..... 6
Importance of the study ..... 6
Definition of Terms Used ..... 7
Qualified librarians ..... 7
Qualitative standards ..... 7
Quantitative standards ..... 8
Knowledge of the use of books and libraries ..... 8
Timitations ..... 9
Organization of the Remainder of the Thesis ..... 9
References ..... 10
II. REVIEN OF THE ITITERATURE ..... 12
Iiferature on Recent School Library Surveys ..... 12
Iiterature on Student Knowledge of the Use of Books and Libraries ..... 14
References ..... 17
III. GROUPS AND MATERKIALS USED ..... 18
Groups ..... 18
Interview Questionnaire ..... 18
Student Test ..... 20
Method of Correlation ..... 23
CHAPIER PAGE
References ..... 24
IV. INIERVIEN QUESIIONNAIRE RESUITS ..... 25
Part A, Librarians ..... 25
Part B, Iibrary Instruction and Use ..... 27
Part C, Library Unit ..... 29
Part D, Collection ..... 29
Total Results ..... 32
V. SIUDENI TEST RESUITS ..... 34
Part I, Definition of Terms ..... 34
Part II, Interpretation of Information on Catalog Cards ..... 34
Part III, Choice of Subject Headings in the Card Catalog ..... 34
Part IV, Arrangement of Headings in the Card Catalog ..... 36
Part V, Literature Reference Books ..... 36
Part VI, Sources of Biographical Information ..... 36
Part VII, Choice of Indexes ..... 36
Part VIII, Interpretation of Information in
Periodical Indexes ..... 36
Part IX, Abbreviations ..... 39
Total Test Results ..... 39
VI. RESUITS OF CORRELATION SIUDIES ..... 41
CHAPIER PAGE
VII. SUNMMARY AND CONCLIUSIONS ..... 45
Purpose ..... 45
Procedure ..... 46
Conclusions ..... 47
Discussion of Results ..... 48
Further Study ..... 48
BIBTITOGRAPHY ..... 51
APPENDIX A. Interview Questionnaire ..... 55
APPENDIX B. Directions for Administering A Library Orientation Test for College Freshmen ..... 60
TABLE PAGE
I. Questionnaire Scores and Ranks for Nine SeniorSecondary School Iibraries, Part A, Librarians26
II. Questionnaire Scores and Ranks for Nine SeniorSecondary School Iibraries, Part B, IibraryInstruction and Use28
III. Questionnaire Scores and Ranks for Nine Senior
Secondary School Iibraries, Part C, Iibrary Unit ..... 30
IV. Questionnaire Scores and Ranks for Nine Senior
Secondarry School Iibraries, Part D, Collection ..... 31
V. Questionnaire Total Scores and Ranks for Nine Senior Secondary School Iibraries ..... 33
VIa. Sub-Test, Parts I, II and III, Results for NineSenior Secondary Schools on A Iibrary Orientation
Test for College Freshmen ..... 35
VIb. Sub-Test, Parts IV, V and VI, Results for NineSenior Secondary Schools on A Iibrary OrientationTest for College Freshmen37VIc. Sub-Test, Parts VII, VIII and IX, Results for NineSenior Secondary Schools on A Tibrary Orientation
Test for College Freshmen ..... 38
TABLE PAGE
VId. Total Test Results for Nine Senior SecondarySchools on A Library Orientation Test for College
Freshmen ..... 40
VII. Rank Correlation of Part A Questionnaire and Total
Test Means ..... 41
VIII. Rank Correlation of Part B Questionnaire and Total Test Means ..... 42
IX. Rank Correlation of Part C Questionnaire and Total Test Means ..... 43
X. Rank Correlation of Part D Questionnaire and Total
Test Means ..... 43
XI. Rank Comelation of Questionnaire Total Score Ranks and Total Test Mean Score Ranks ..... 44

## ABSTRACT

Ifibrary literature and educational writings appraising school libraries imply that if qualitative and quantitative standards of.. school 1ibrarlies were sufficientiy high, the students would be proflicient in the knowledge of the use of books and libraries. No. evidence, however, is piesented to support this assumption. The lack of empirical evidence prompted, the present study as an attempt to discover if a positive correlation does exist between qualitative and quantitative standards of school libraries and the students' knowledge of the use of books and Hibrames.

The instriment used to ascertoin the qualitative and quantitative standards of nine sentor secondary schools in three Eritish Columbla schiool districts was a closed-question intervièw questionnalre consilsting of four major divisions. The results of the questionnaire were tabuiated as rumerical scores and placed in rank order for each of the four major divisions and for the total.

Two hundred seventy-eight students in nine senior secondary schools were tested under standard procedures using the test A Ifbrary Ocientation Test for College Freshmen. Intact groups of English 40 or English 91 students were tested in each of the nine schools. Test score results were tabulated for each part of the nine sub-tests for the test as a whole.

Means of the results for each of the nine parts of the test were tabulated by school and placed in rank onder. Correlations between mean score ranks and interview questionnaire score ranks were computed for each of the nine subutests and the total test,

In this study it was found that generally a low positive rank correlation exists, The correlation did not depart signtificantly from zero.

It is suggested that, further studies be conducted to isolate and to control variables which may have a bearing on the relationship between quailitative and quantitative standards of school libramies and the students' knowledge of the use of books and libramies.

## CHAPIER I

## STATENENT OF THE PROBLEN AND DEFINITION OF TERVS USED

The school library is a twentieth century public school innovation. It is still in a process of development. Progress has been made from the earliest collections of miscellaneous books which happened to be available, housed wherever possible, to the more complex materials centres in specially designed library units. So much has been written about the library as the "heart of the school" that the phrase has become a truism to which educators often refer, while in actual practice the educational potential of the school library is not fully realized. School administrators would do well to consider Bryan, former president of the American Iibrary Association, when he states: "Libraries are an essential frame of reference for the educational process. ${ }^{11} 1$

With the implementation of new programmes of studies and with new curricular developments, the library becomes an even more essential tool in the students' pursuit of knowledge. The proposed resource courses in British Columbia stress problem solving by the individual student through the use of resource materials-many of which must be made available in a modern school library.

In order to use the school library effectively, students must acquire a working knowledge of the use of books and libraries whereby they are able to use efficiently, in addition to their text books, the vast array of collatoral and supplementary materials. Logasa, thirtythree years ago, emphasized the importance of the students' knowledge
of the use of books and libraries when she pointed out that:
One of the direct educational responsibilities of the library is that of training pupils to use books and libraries. Such knowledge has become practically indispensable to the student in recent years, since practically no school course is offered which does not require the use of library materials for its elucidation or amplification. ${ }^{2}$

More recently, Darling emphasized the need for book and library skills when he stated that: "Students need more specialized instruction in the use of the library if they are to use materials effectively in independent study. ${ }^{3}$ The present day emphasis on independent study and the up-grading of course content makes new demands upon the student. No longer is the text book the sole resource or depository for any given field of knowledge. Darling's statement concerning the knowledge of the use of books and libraries consequently has a direct bearing upon the functions of the school library. The school library should provide for each student the best possible physical envirorment such as: adequate reading and study space, book and non-book materials related to all areas of study, and the trained personnel to acquaint the student with the necessary knowledge of the use of books and libraries for independent study.

In British Columbia, the Department of Education also recognizes a need for library instruction in the schools. Several Departmental bulletins give directives for the teaching of techniques in the use of books and libraries. The Library Manual for the Public Schools of British Columbia, says: "There are certain library skills which every child should learn...to be used as tools in broad learning situations. 14

The Administrative Bulletin for Secondary Schools, 1961, states that: Arrangements should also be made that pupils in grades IX to XIII undertake work in the library...."5 In order that students may acquire a knowledge of the use of books and libraries, materials for such learning are required.

In library evaluation two standards are employed: qualitative and quantitative. Qualitative standards are suggested by the Department of Education when it recommends that: "...the school library should provide those volumes necessary to supplement the textbook sources of reference material for all courses taught in the school."6 The American Library Association extends these standards beyond a mere book collection to the organization of comprehensive library resources and programmes; thus, "...the school library program, embracing teaching guidance and advisory services, forms a unique and vital part of quality education. ${ }^{n 7}$ qualitative standards are then interpreted as those aspects of the library which have a bearing upon the excellence of the educational function in providing opportunities for the student to pursue his studies beyond the text book level in an environment conducive to the pursuit of knowledge.

Quantitative standards, on the other hand, generally imply the number of volumes accessioned in the library and the physical aspects of the library unit such as: reading space, provision for individual or group study, accessibility of library materials and the quantity of available materials, book and non-book.

The Canadian Library Association Enquiry Committee found the quantitative standards as outlined in the Iibrary Manual for Public Schools of British Columbia, 1955, inadequate for the required needs of the progranmes of instruction. 8 On page 5 of the Library Manual the recommendations for secondary schools of five hundred to one thousand students are as follows:

1. five thousand or more books
2. twenty or more magazines
3. one teacher-librarian or a full-time librarian
4. expenditures of sixty cents to one dollar per student annually for books
5. a reading-room seating at least ten per cent of the enrollment
6. a conference room and a workroom. 9

The recomendations make no mention of such non-book materials as newspapers or audio-visual equipment. In contrast, the minimum standards advocated by the American Library Association, 1960, for the same number of students are:

1. six to ten thousand books, or ten books per student
2. one hundred twenty general magazines
3. three to six newspapers
4. extensive collection of pamphlets
5. annual expenditures of four to six dollars per student
6. additional funds for reference materials
7. additional funds for audio-visual materials
8. one full-time and one part-time school librarian and one clerk for each six hundred students. 10

The above standards resulted from an investigation into existing conditions in an attempt to set minimum standards for school libraries.

The British Columbia Teacher-Iibrarians' Association, an affiliate of the British Columbia Teachers' Federation, presented a brief to the Department of Education for the improvement of school library services.

The brief pointed out the need for qualitative and quantitative standards in British Columbia school libraries and the need for systematic instruction in the use of books and libraries. 11 In April, 1964, the Department of Education Administrative Circular outlined, in the broadest terms, the purposes and aims of the school library and of its place in the school. 12 In no way was this circular definitive, nor did it attempt to describe the actual qualitative and quantitative standards needed for efficient library operation. The qualitative and quantitative standards for school libraries may be summarized by the American Iibrary Association's statement that: These essential elements...for a dynamic library program are inter-locking and interdependent... and [that] all the standards have been based primarily on what the school library program must have to give very good service to teachers and students, to provide the printed and audio-visual resources necessary for effective teaching and learming and to function as an educational force within the school. 13

Iibrary literature is replete with suggestions and opinions about qualitative and quantitative standards and the need for students to have a working knowledge of the use of books and libraries. No studies, however, have been made to determine if a relationship exists between these factors. Studies made have considered either one or the other (qualitative, quantitative standards or the need for students to have a knowledge of the use of books and libraries) with no attempt to determine if a relationship exists between them.

## I. THE PROBLEM

Statement of the problem. It is the purpose of this study (1) to ascertain the qualitative and quantitative standards of school libraries by means of an interview questionnaire with school librarians; (2) to test the students' knowledge of the use of books and libraries by means of the test: "A Library Orientation Test for College Freshmen"; and (3) to determine if a positive relationship exists between these two parts of the study.

Inportance of the study. Nuch has been written about the importance of the students' knowledge of the use of books and libraries, the qualitative standards, including the training of the librarians, and the quantitative standards of school libraries. It has become a universal belief that a school library with high qualitative and quantitative standards will produce students proficient in the use of books and libraries. No research study was found to substantiate the foregoing assumption.

While most research studies of British Columbia school libraries have been historical, $14,15,16$ the 1960 Royal Commission on Education assessed school libraries through questionnaires to District superintendents of schools, principals of British Columbia schools and university students. In addition, the Commission was presented with a number of briefs advocating changes to bring school libraries into focus as an educational force. ${ }^{17}$ In its summary the Commission stated that school libraries were adequate for the present. A general recommendation is
made by the Cormission: "...when library periods are provided they be more systematically devoted to instruction on the use of source materials."18 No recommendations were made regarding specifications for school library standards.

Surveys have been limited to the assessment of existing conditions in school libraries as they pertain to the quantitative standards with no attempt made to ascertain the students' knowledge of the use of books and libraries. ${ }^{19,20}$ In this study an attempt is made to determine if a positive relationship does exist between the qualitative and quantitative standards and the students' knowledge of the use of books and libraries.

## II. DEFINITIONS OF TERMS USED

Throughout this study the following terms will be used.
Qualified librarians. Two types of qualified librarians are engaged in school library work. The term "school librarian" is used to designate an individual holding a Bachelor of Library Science degree together with a teaching certificate while a "teacher-librarian" refers to a person who has a Bachelor of Education degree with a library major.

Qualitative standards. Throughout this study the term "qualitative standards" has been applied to the qualifications of the librarian, to the excellence of the library's holdings of book and nonbook materials, as judged by the high correlation to the school curricula, and to the facilities provided for student use of the library and its
resources; such as those suggested by the American Iibrary Association.
Quantitative standards. The term "quantitative standards" is used in the evaluation of those aspects of the school library which are related to the library unit--the maximum reading-room space, provision for group conference or seminar rooms, book allotment per student, money appropriation per student for books, provision for professional and clerical help, and the hours of accessibility.

Knowledge of the use of books and libraries. The knowledge of the use of books and libraries incorporates the information sought in the test: A Library Omientation Test for College Freshmen, 1955 edition. While the test was designed for students entering college, the test is applicable to students in grade twelve on the academic programme. The test is composed of nine parts with eighty items. In the Mental Measurements Year-Book, Afflerbach observes: "This eighty item test provides an excellent two-way look, backwards as an assessment of the effectiveness of the high school library program and forward towards a broadening and strengthening of the college library program to meet student needs." In the same review of the test, Wrightstone states that: "[the] various test exercises have face validity as measures of important knowledge that a college freshman should acquire in learning how to use the resources of a library" but that the "...manual contains no data on reliability and validity and no norms; hence the test cannot be considered standardized."21 Although the test was designed for college freshmen, it can, as Afflerbach states, serve backwards as "an assessment of the effectiveness of the high school library programe",
particularly with grade twelve students on an academic progranme who probably will continue with post-high school education.

## III. IINITIATIONS

This study was limited to three British Columbia school districts. Selection of school districts was made on the basis of the similarity between the types of community. All three are large municipal areas. Two of the districts are primarily upper middle class with a slightly higher sociomeconomic rating than the average British Columbia cormunity. The other district is more varied and could more readily be compared with any urban area representative of all socioeconomic levels. ${ }^{22}$

In each of the nine senior secondary schools the librarian was interviewed. In each school the test was administered to an intact group of grade twelve students on the academic programe.

## IV. ORGANIZATION OF THE RENATNDER OF THE THESIS

The remainder of the thesis will present a summarization of selected literature related to the present study, a description of the materials used and the groups tested, the results of the interview questionnaire and the library test, a summary of the findings and conclusions reached.

I Bryan, James E. "Students, Libraries, and the Educational Process." American Iibrary Association Bulletin, vol. 56 (September
1962), p. 707.

2 Logasa, Hannah. The High School Library; Its Function in Education. New York, Appleton, 1928, p. 171.

3 Darling, Richard L. "Tomorrow's School and Today's School Tibrarian." Pacific Northwest Library Association Quarterly, vol. 8 (April 1964), $\frac{187 .}{}$

4 British Columbia. Department of Education. Division of Curriculum. Iibrary Manual for the Public Schools of British Columbia. Victoria, 1955, p. 4.

5 British Columbia. Department of Education. Administrative Bulletin for Secondary Schools, 1961. Victoria, 1961, ㄱ. 18.

6 British Columbia. Department of Education. Division of Curriculum. Library Manual for the Public Schools of British Columbia. Victoria, 1955, unnumbered, in pref'ace.

7 American Iibrary Association. Standards for School Library Programs. Chicago, American Library Association, 1960, p. 4.

8 Canada. Canadian Library Association. The Present State of Library Service in Canada: a Program of Enquiry for 1960/61. Óttawa, 1962, pp. 206-207.

9 British Columbia. Department of Education. Division of Curriculum. op. cit., p. 5.

10 American Library Association. op. cit., pp. 24-25.
11 British Columbia. Teacher-Tibrarians' Association. A Brief to Support Recommendations of the Executive Committee of ${ }^{-1}$ the British Columbia Ieachers' Federation for the Improvement of School Ifibrary Services to Students. 1963, passim.

12 British Columbia. Department of Education. Administrative Circular. Victoria, April, 1964, passim.

13 American Library Association. op. cit., p. 23.

14 Ellison, Shirley Elizabeth. Iibrary Service to Children in the Rural Areas of British Columbia. Seattle, University of Washington, 1952, (Unpublished Thesis: M. L. University of Washington), passim.

15 English, Moira Latimer. A Study of Library Service to Sparsely Populated Areas with Special Reference to Northern British Columbia. Seattle, University of Washington, 1953, (Thesis: M. L. University of Washington, microfilm), passim.

16 Holmes, Marjorie C. Library Service in British Columbia; a Brief History of its Development. Victoria, Public Library Comission of British Columbia, 1959, passim.

17 Rothstein, Samuel. "Our Day in Court: British Columbia Iibrary Association Before the Royal Commission on Education." British Columbia Iibrary Quarterly, vol. 22 (April 1959), pp. 25-29.

18 British Columbia. Royal Commission on Education. Report of the Royal Commission on Education. Victoria, Queen's Printer, 1960, p. 363.

19 Darling, Richard I. et al. Pacific Northwest Iibrary Association Development Project Reports. Seattle, University of Washington Press, 1960. (Elementary and Secondary School Libraries of the Pacific Northwest, ed. Morton Kroll, vol. 2), pp. 213-215.

20 Egoff, Sheila A. and Gibson, Barbara. School Library Service in the School District of New Westminster; a Study of Book Collections and School Iibrary Service. Vancouver, 1963 , mimeographed, passim.

21 Buros, Oscar Krisen. Mental Measurements Yearbook, Fifth Edition. Rutgers University Press, New Brunswick, New Jersey, 5:693.

22 British Columbia. Department of Finance. British Columbia Financial and Economic Review. Victoria, July, 1963, p. 54.

## CHAPIER II

## KEVIEN OF THE ITIERAIURE

Much has been written about school libraries; however, only two areas will be considered as relevant to the problem under discussion.

## I. ITITERAIURE ON RECENI SCHOOL IIBRARY SURVEYS

Since 1960, when the American Iibrary Association published the Standards for School Libraries, numarous surveys, mainly in the United States, have been conducted to assess the qualitative and the quantitative standards of school libraries. Darling's Survey of School Iibrary Standards is an analysis of regional and state standards for school libraries to show recent changes, promising developments, and the relationships of these standards to national standards. The survey includes the official statements of school library standards by regional state organizations and the state departments of education. Tables showing the developments in each state have been drawn up and analysed to provide a comparative study of existing conditions. ${ }^{1}$

The American Library Association of School Librarians initiated the School Library Development Project to encourage and to assist state and local groups in implementing the 1960 American Library Association standards for school libraries. Provision was made for leadership training of representatives from the fifty states. Grant funds were
allocated for twenty-one special projects in school library development. Subjective assessment was made, based on the following concepts:

The worth of a school library must be measured by the services it provides for students and teachers. The good school library makes four unique and essential contributions to education:

1. It is the center for the leaming materials required to support the instructional program and meet the needs of students.
2. It offers a planned, continuous program of instruction in library and study skills, equipping pupils for independent use of learning resources.
3. It serves as a classroom laboratory for reference and research work, and its staff works closely with other teachers in a team approach to instruction.
4. It offers individual guidance to students in using materials--in reading, listening and viewing--to meet their personal, social, educational, and vocational needs.?

Unfortunately, the results are difficult to assess because of their subjectivity. Evidence of qualitative and quantitative growth was shown to be most marked in the twenty-one special projects school libraries.

Two schools, one with untrained library personnel and one with trained library personnel were studied by Horney to note the effect of trained library personnel on the achievement of standards in school library service. The thesis, while stating a positive relationship between trained personnel and achievement of standards in school libraries, is not explicit in stating just what standards were being evaluated and how the effect was measured. Much of the thesis is a review of the duties of the personnel and the organization and administration of the library budget. 3

A recent survey of British Columbia school libraries has been conducted. Fgoff from the University of British Columbia School of Librarianship and Gibson from the University of British Columbia Library were invited by the New Westminster School District to conduct a study of the book collections and school library services in that district. The survey is comprehensive in the analysis of existing conditions and offers suggestions for a realistic and systematic fulfillment of qualitative and quantitative standards. ${ }^{4}$

While each of the foregoing surveys stressed the importance of qualitative and quantitative standards for school libraries and the need for library instruction at all levels of the school system, no study was made to assess the knowledge of the use of books and libraries acquired by the students.

## II. IUTERATURE ON SIUDENT KNOWLEDGE OF THE USE OF BOOKS AND ITBRARIES

Studies pertaining to the students' knowledge of the use of books and libraries are meagre. Literature related to this concept is primarily concerned with teaching methods. Since students acquire a working knowledge of the use of books and libraries either by instruction or by trial and error, written material in the field is either descriptive or prescriptive methodology.

Wilkins, writing in the National Association of Secondary School Principal Bulletin, introduces his article on school libraries with:

Students, regardless of personal goals and future fields should be taught the basic skills needed to use any library intelligently. Those going on to college will have a head start on those who are not familiar with the library. 5

He presents the usual generalization that knowledge of the use of books and libraries is "a good thing" but he does not support his premise with empirical data.

Berner, through a series of organized lessons on books and libraries presents a systematic and orderly progression from the simplest library skill, that of finding a book, to the complex use of periodical indices. By using these lessons and by providing the students with an understanding of basic library procedures, she feels that the student will be better equipped to meet his educational
needs. This concept is outlined in the forward of her book:
It has been truly said that the next best thing to knowledge about any area of human learning is knowing where to obtain that knowledge. And the one who has learned to use the library confidently and effectively has been given the key to knowledge unilimited. ${ }^{6}$

The lessons have been developed and used. Unfortunately, no results have been published regarding their effectiveness in producing students with a knowledge of the use of books and libraries.

In Training Laymen in the Use of the Library, Bonn reviews the literature on library instruction from 1876 to 1958. His conclusions are stated in the general summary:

The assumption seems to be, simply, that training in library use will make any use of a library that much more efficient, effective, rewarding, and satisfying; and it is this assumption which motivates and stimulates all efforts at instruction in the use of libraries, More than that, at present, cannot be justified.

Bonn's summarization suggests that the knowledge of the use of books and libraries is transferable from one library to another. Hence, all students should acquire an understanding of books and libraries.

## REFERENCES

1 Darling, Richard L. Survey of School Library Standards. Washington, U. S. Department of Health, Education and Welfare, I964, passim.

2 Kennon, Mary Frances and Doyle, Leila Ann. Planning School Library Development; a Report on the School Iibrary Development Project, February 1, Ig6I-July 31, 1962. Chicago, American Iibrary Association, 1962, pp. 7 and 10.

3 Horney, Peggy Campbell. Study of the Effect of Trained Library Personnel on the Achievement of Standards of School Eibrary Service. University of North Carolina, 1964, (Unpublished Thesis: M. S. in L. S. University of North Carolina), passim.

4 Egoff, Sheila A. and Gibson, Barbara. School Iibrary Service in the School District of New Westminster; a Study of Book Collections and School Ifbrary Service. Vancouver, 1963, mimeographea, passim.
5.Wilkins, John B. "Library Instruction=Curriculum Nust." National Association of Secondary School Principal Bulletin, vol. 43, (November, 1959), p. 130.

6 Berner, Elsa. Integrating Library Instruction with Classroom Teaching at Plainview Junior High School. Chicago, American Iilbrary Association, 1958, Foreward ili.

7 Bonn, George S. Training Laymen in the Use of the Library. Rutgers, The State University, New Brunswich, N. J., 1960. (The State of the Library Art, ed. Ralph R. Shaw, vol. 2, part I), p. 3.

## CHAPIER III

## GROUPS AND MATERTALS USED

## I. GROUPS

Ten senior secondary schools were contacted through the superintendents of schools for each of the three districts included in the study. Through the principal of each of the schools arrangements were made by telephone to interview the librarians. Tentative arrangements for administration of the test were made at the same time. Final details were completed during an interview with the principals and the librarians to arrange for an intact group of English 40 students to take the test. In four instances, for various reasons, English 40 students were unable to take the test, so English 91 students were used in these cases. One school was deleted from the study af'ter insufficient test results were received.

## II. INIERVIEN QUESIIOANAIRE

The device used to ascertain the qualitative and quantitative standards of school libraries was a closed-question interview questionnaire. Questionnaires used in other surveys were either quite general or open-ended in format. ${ }^{1}$ In the instrument prepared for this study questions were related to the American Library Association standards and the proposed standards for school libraries in British Columbia which are as yet in draft form. ${ }^{2}$ In an attempt to group the major
categories into an organized form for tabulation, the questionnaire was arranged in four sections; namely: A. Librarians; B. Tibrary Instruction and Use; C. Library Unit; D. Collection. Space was provided at the end of the questionnaire for the interviewer's comments.

While the items on the questionnaire are in no way exhaustive they represent the most pertinent points raised in the literature. Part A. Iibrarians, consists of eleven major questions dealing with certification and conditions of work. Part B. Iibrary Instruction and Use, contains nine questions relating to the student use and administration of the library. Part C. Iibrary Unit, has seven questions dealing with the physical aspects of the library in relation to the school population. The final section, Part D. Collection, consists of sixteen sub-sections relating mainly to the reference collection of the library. Although the time element was one consideration for abbreviating this section to a selective representation of primarily ready-reference books, it was not the only one. The specific titles asked for are, in practice, most commonly used as reference books by the students. The books asked for were also related to the ones listed on the test, A Iibrary Orientation Test for College Freshmen. Non-book materials such as periodicals, newspapers, films and film strips and recordings were included in this part of the questionnaire, as was the money appropriation for book and non-book materials.

Numerical values were assigned to items which could be rated. Weighting was arbitrarily assigned in keeping with the philosophy of the American Library Association standards of 1960 and the draft form
of school library standards of the British Columbia Department of Education. A total score was obtained for each of the four parts and one for the entire questionnaire. A copy of the interview questionnaire is in Appendix A.

## III. SIUDENI TESTI

The student test: A Library Orientation Test for College Freshmen was administered to intact groups ranging from twenty-five to forty subjects of English 40 or English 91 classes in each of the nine schools. A procedure was devised whereby the test was administered as closely as possible under standardized testing conditions. Appendix B contains the procedures devised for administering the test. Administrators were asked not to reveal to the students that they were part of a survey but to answer any questions relating to the purpose of the test by telling the students that selected groups had been asked to complete the test so an assessment could be made of the students' knowledge of the use of books and libraries.

A Library Orientation Test for College Freshmen was devised by Ethel Feagley and a three member committee for the Teachers College, Columbia University. The test has a total of eighty items divided into nine parts.

Part I, Definition of Terms consists of nine multiple choice questions to determine the understanding of book and library terminology. The eleven questions in Part II, Interpretation of Information on a Catalog Card are based upon a catalog card model with numerical iden-
tification for the information included on a descriptive main entry card. The student is asked to identify six of the areas and to mark five of the questions either true or false as they relate to the information presented on the sample card. Nine multiple choice questions in Part III, Choice of Subject Headings in the Card Catalog ask the student to select the appropriate subject heading used in a card catalogue. Part IV, Arrangement of Headings in the Card Catalog lists seven rules for alphabetization used in filing catalogue cards. The student is asked to arrange five groups of subject headings into the correct alphabetical order within each group. Eight literature reference books are listed in Part V, Iiterature Reference Books. The student is asked to select the appropriate reference for six items. Seven items, in which the student is asked to select the one reference which would provide the fullest biographical information, are found in Part VI, Sources of Biographical Information. This section is so heavily American oriented that many of the students would likely be unfamiliar with the books since many of them are not part of the usual reference section of Canadian school libraries. In the nine questions of Part VII, Choice of Indexes, students must select one index from the seven listed. Since the Readers' Guide to Periodical Iiterature is the only index found in most school libraries, in the abridged form, it is probably the only one familiar to the students. Sample index entries are given in Part VIII, Interpretation of Information in Periodical Indexes, to determine the extent of the students' understanding of periodical index entries: seven items are identified by a
numerical symbol and the student is asked to interpret the information provided by these symbols. Five true or false statements are asked about the index entries. Finally, in the last part, Part IX, Abbreviations, students are asked to identify twelve commonly used abbreviations.

The test was devised for the following purposes:

1. to discover to what extent and in what areas college freshmen need instruction in using the resources of the college library;
2. to enable college freshmen to recognize their deficiencies in the use of the library;
3. to provide data that can be used as a basis for a program of library instruction fitted to the needs of the particular student group. 3

The Manual of Directions further states that the present test is the result of three revisions and a number of experiments with various groups to determine the most applicable questions for testing the students' knowledge of the use of books and libraries.

In this study, the test has been used with grade twelve academic students as an appraisal of the students' knowledge of the use of books and libraries.

As the completed tests were received they were marked by persons experienced in psychometric testing but not involved in this study. Tabulations were made of (1) total test scores, and (2) scores for each of the nine sub-tests. All items were checked again by the writer. For each of the nine schools used in the investigation the means for the nine sub-tests and for the test as whole were obtained by computer analysis. ${ }^{4}$

Method of correlation. Spearman's coefficient of rank correlation, rho, for tied ranks, using the formula: $\rho=1-\frac{6 \sum d^{2}}{N\left(N^{2}-1\right)}$ and averaging tied ranks was used to determine the rank correlation for:

1. Correlation between Part A Interview Panks and Test Mean Ranks,
2. Correlation between Part B Interview Ranks and Test Mean Ranks,
3. Correlation between Part C Interview Ranks and Test Mean Ranks,
4. Correlation between Part D Interview Ranks and Test Mean Ranks,
5. Correlation between Total Interview Score Ranks and Test Mean Score Ranks.

The critical value of rho for the Spearman rank correlation coefficient for nine cases at the five per cent significant level (one-tailed test) taken from Table G, Statistical Analysis in Psychology and Education is . 600.5 Although only nine cases were used in this study, the obtained correlation coefficients were tested for significance at the five per cent level using the formula: $t=\rho \sqrt{\frac{N-2}{1-p^{2}}}$

1 Henne, Frances, et al. A Planning Guide for the High School Iibrary Program. Chicago, American Library Association, I951, passim.

2 Levirs, Franklin P. Assistant Superintendent (Instruction) of Education. Department of Education. Victoria, British Columbia. In a report to the Teacher-Iibrarian's Association at the Easter Convention, April, 1965, Vancouver, B. C. Mr. Levirs summarized the proposed standards for British Columbia school libraries. These standards are still in draft form. He informed the group that the final results of a two-year study would be circulated to the schools of the province as soon as possible.

3 Manual of Directions for A Tibrary Orientation Test for College Freshmen. n.d., passim.

4 Anderson, H. E. Sandia Corporation. Alburquerque, New Mexico. 1620 General Program Library. Distat (Distribution of Statistics), passim.

5 Ferguson, George A.- Statistical Analysis in Psychology and Education. New York, McGraw-Hill, 1959, p. 316.

The Table of critical values of rho, the Spearman Rank correlation coefficient was adapted from E. G. Olds, Distributions of sums of squares of rank differences for small numbers of individuals, Annals of Mathematical Statistics, 9, 133-148, 1938.

## INIERVIEW QUESTIONNAIRE RESUTTS

Approximately two hours were spent with each of the librarians. This provided an opportunity to see each library in operation, to complete the questionnaire and to discuss it with the librarian. Answers were recorded during the interview. Results were tabulated after each interview session.

The interview questionnaire provides a means for measuring qualitative and quantitative aspects of each school library. A copy of the interview questionnaire is included in Appendix A.

Nine senior secondary school libraries were used in the analysis of the data.

An analysis of the interview questionnaire, Part A, Iibrarians is presented in Table I, page 26. Of the nine librarians interviewed, one has less than the minimum qualifications of a Bachelor of Education degree with a library major, two hold basic qualifications of a Bachelor of Education (secondary) degree with a library major and six hold advanced certification of further qualifications beyond the basic teacher-librarian certificate. All but two librarians have had teaching experience of two or more years. All nine have been librarians in schools and in their present positions for two or more years. In four cases the librarians spend full-time on library procedures. Three librarians register home-room classes; two of these register the home-

## QUESIIONNAIRE SCORES AND RANKS FOR NINE SENIOR SECONDARY SCHOOL IIBRARIES, PARIL A, ITBRAKIANS.

|  |  |  |  |  |  |  |  |  |  |  |  | (j) Clerical help is |  |  | $\begin{aligned} & \text { 曷 } \\ & \text { E } \end{aligned}$ | 䆡 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A | 1 | 0 | 0 | 1 | 0 | $0 \times$ | 1 | 1 | 1 | 1 | 2 |  | 0 | 0 | 8 | 9 |
| B | 3 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 2 | 2 | 2 |  | 0 | 0 | 13 | 4 |
| C | 2 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 2 | 2 | 2 |  | 0 | *2 | 14 | 2.5 |
| D | 2 | 2 | 0 | 0 | 0 | 13 | 1 | 1 | 1 | 2 | 2 |  | 0 | 0 | 12 | 6 |
| E | 3 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |  | 0 | 0 | 9 | 8 |
| F | 3 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 2 | 2 | 2 |  | 1 | 1 | 15 | 1 |
| G | 3 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 2 | 2 | 1 |  | 0 | 0 | 12 | 6 |
| H | 3 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 1 |  | 0 | 0 | 12 | 6 |
| I | 3 | 2 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 2 |  | 0 | 0 | 14 | 2.5 |

*This school provides library service to students and Night School classes from 4:00 P.M. to 9:00 P.M. daily. A qualified teacher-librarian is in charge of the evening sessions and works in co-operation with the day-time librarian.

Refer to Interview Questionnaire, Appendix A, for explanation of table entries.
room in the library. In two cases the librarians are asked to act as substitute teachers occasionally. Some clerical and professional assistance is given in one case where centralized technical processing was star'ted part way through the school year, 1964-1965. Libraries A, B, C, D, E will be provided with centralized cataloguing and book processing services starting May, 1965. Iibraries G, H and I have no provision, other than student help, for clerical assistance. The situation in Iibrary $C$ is unique. An experiment was started in the fall of 1964 to open the school library in the evenings for student and adult class use. The experiment proved successful so the practice has been continued.

Data and rank orders for Part B, Iibrary Instruction and Use are presented in Table II. Two significant facts are apparent: (1) that grade twelve students receive no systematic instruction in books and libraries, and (2) that they are never tested, in any way, on their knowledge of the use of books and libraries. It would appear that instruction in the use of books and libraries is incidental because: (1) in two cases grade twelve students are scheduled to the library but receive no definite instruction, (2) in two cases grade twelve students are scheduled to the library only occasionally and (3) in no cases are grade twelve students scheduled for definite instruction in the use of books and libraries. Although no organized programme exists: (1) in seven cases teachers and librarians endeavour to plan for student needs by correlating instruction using library materials, (2) in eight cases teachers and librarians plan

## TABLE II

## QUESIIIONNATRE SCORES AND RANKS FOR NINE SENIOR SECONDARY SCHOOL ITBRARIES, <br> PARII B,

IIBRARY INSTIRUCIION AND USE

| $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & \hline 1 \end{aligned}$ |  |  |  |  |  |  |  |  |  |  | 总 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 6 | 7.5 |
| $B$ | 1. | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 2 | 9 | 3 |
| C | *2 | 1 | 0 | 2 | 1 | 0 | 2 | 0 | 2 | 10 | 2 |
| D | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 6 | 7.5 |
| E | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 5 | 9 |
| F | 1 | 1 | 1 | 1. | 1 | 0 | 1 | 0 | 2 | 8 | 4.5 |
| G | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 2 | 8 | 4.5 |
| H | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 1 | 7 | 6 |
| I | 1 | $\therefore 1$ | 2 | 2 | 2 | 0 | 2 | 0. | 2. | 12 | 1 |

*This library provides library service to students and Night School classes from 4:00 P.M. to 9:00 P.M. daily.

Refer to Questionnaire, Appendix A, for explanation of table entries.
class assignments using library materials, and (3) in eight cases grade twelve students work in independent groups in the library. In each case the library is accessible to students during the regular school day with the exception of Library $C$, where evening hours are provided.

In Table III, Part C, Iibrary Unit, the total enrollment for 1964-1965 is given in the first column. Seating accommodation in two libraries was less than five per cent of the total enrollment, while in seven libraries provision was made to accormodate approximately ten per cent of the enrollment. In two cases the library is used as a home-room and in two cases as a subject-matter classroom.

Data regarding Part D, the Collection is given in Table IV. Libraries $B, C, F, G$, and $H$ have been in operation for more than five years. This is apparent in the size of their over-all book stock. The remaining libraries have been in operation from three to five years and are still in the process of building up their basic collections. General reference books are well represented in each of the schools. Periodical indices, on the other hand, are not used in one school and only one library subscribes to both the Canadian Index and the Abridged Readers' Guide. Non-book materials such as pictures, maps, periodicals, newspapers, vertical file items (pamphlets), films and film-strips and recordings are the least adequately represented. In every case the money appropriation was below the minimum of four dollars per student enrolled. In three cases an additional grant was given to the library for non-book materials.

## TABLE III

QUESIIIONNATRE SCORES AND RANKS FOR NINE SENIIOR SECONDARY SCHOOL ITBRARIES, PART C, ITBRARY UNIT

| $\begin{aligned} & \mathscr{y} \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ |  |  | ซ <br>  <br> 7 8 0 0 <br>  <br> 을 |  |  | (f) Card catalogue | (g) Conference rooms: |  | 宴 | 急 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A | 750 | 2 | 2 | 2 | 0 | 1 | 0 | 0 | 7 | 4.5 |
| B | 850 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 7 | 4.5 |
| C | 950 | 0 | 2 | 2 | 1 | 1 | 0 | 0 | 6 |  |
| D | 650 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 7 | 4.5 |
| E | 760 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 4 | 9 |
| F | 909 | 2 | 2 | 1 | 1 | 1 | 0 | 0 | 7 | 4.5 |
| G | 1200 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | $9^{\circ}$ | 1 |
| H | 1340 | 0 | 2 | 2 | 1 | 1 | 1 | 1 | 8: | 2 |
| I | 1200 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 5 | $8^{i}$ |

Refer to Questionnaire, Appendix A, for explanation of table entries.

TABLE IV
QUESIIIONNAIRE SCORES AND RANKS FOR NINE
SENIOR SECONDARY SCHOOL ITBRARTES
PART D, COITECIION

| $\left\lvert\, \begin{gathered} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ \hline 10 \end{gathered}\right.$ |  |  | (b) Encyclopedias: i general |  |  |  |  |  | $\begin{aligned} & 0 \\ & 0 \\ & 8 \\ & 8 \\ & -7 \\ & -7 \end{aligned}$ |  |  | $\begin{gathered} 2 \\ 0 \\ 0 \\ -0 \\ -8 \\ -1 \\ \hline 1 \\ \hline 60 \\ \hline \end{gathered}$ |  |  |  |  |  | m) Money appropriation |  |  |  | 㲾 | 㥯 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A | 3000 | 0 | 4 | 1 | 2 | 7 | 6 | 5 | 0 | 1 | 5 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 35 | 6 |
| B | 5614 | 2 | 4 | 1 | 3 | 9 | 5 | 4 | 1 | 2 | 4 | 2 | 1 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 43 | 4.5 |
| C | 5333 | 2 | 3 | 1 | 1 | 10 | 3 | 2 | 2 | 1 | 5 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 34 | 7 |
| D | 2509 | 0 | 3 | 1 | 1 | 6 | 2 | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 22 | 9 |
| E | 3540 | 0 | 2 | 1 | 2 | 6 | 3 | 1 | 3 | 3 | 2 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 29 | 8 |
| F | 5320 | 2 | 2 | 4 | 2 | 8 | 11 | 7 | 2 | . 4 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 50 | 3 |
| G | 10000 | 2 | 6 | 2 | 2 | 10 | 10 | 5 | 6 | 2 | 5 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 55 | 1 |
| H | 5500 | 0 | 4 | 2 | 3 | 20 | 4 | 5 | 2 | 1 | 5 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 51 | 2 |
| I | 4300 | 0 | 3 | 0 | 4 | 15 | 9 | 3 | 2 | 0 | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 4.5 |

Numbers given for books are for different titles in each category.
Refer to Questionnaire, Appendix A, for explanation of table entries.

Total questionnaire scores and ranks are presented in Table V. Since library G is the longest established (over twenty years), it has had time to build up its collection and library facilities (see Tables III and IV), which have influenced the total result to place this library in the top position. Libraries $D$ and E, the most recently established libraries (three and four years respectively), tied for last place. Tibrary E ranks eight, nine, nine and eight respectively in $2 l l$ four sections of the interview questionnaire. Weak points for library D are Part B, Iibrary Instruction and Use-mank 7.5 and Part D, Collection-rank 9.

## TABLE V

QUESIITONNAIRE TOTAL SCORES AND RANKS FOR NINE SENIOR SECONDARY SCHOOL ITBRARIES

| Iibraries | Total Score | Total Rank |
| :---: | :---: | :---: |
| A | 56 | 7 |
| B | 74 | 4.5 |
| C | 64 | 6 |
| D | 47 | 8.5 |
| E | 47 | 8.5 |
| F | 80 | 2 |
| G | 84 | 1 |
| H | 78 | 3 |
| I | 74 | 4.5 |

## CHAPIER V

## SIUDENI TEST RESUTTS

The test, A Library Orientation Test for College Freshmen, was administered to two hundred seventy-eight grade twelve academic prograrme students.

The results of the test are presented in Table VI. The range, mean and ranks for each of the nine parts of the test and for the total test are presented for the nine libraries. Ranks are based on the mean scores. Table VIa shows the subjects tested and the results of Parts I, II, and III of the test. Table VIb shows results for Parts IV, V, and VI, while Table VIc shows the results for Parts VII, VIII and IX, and Table VId shows the results for the total test.

Part I, Definition of Terms consists of nine questions. Pupil scores range from two to nine with a mean of 6.91 while the individual schools show means ranging from 6.37 to 7.88 .

Part II, Interpretation of Information on Catalog Cards, consists of eleven items. Pupil scores range from three to eleven with a mean of 7.87. Individual schools show means ranging from 7.13 to 8.80 .

Part III, Choice of Subject Headings in the Card Catalog, consists of nine items. Pupil scores range from three to nine with a mean of 7.29. Individual schools show means ranging from 6.78 to 8.44 .

TABLE VIa
SUB-TEST, PARIS I, II AND III, RESUITS FOR NINE SENIOR SECONDARY SCHOOIS ON A IIBRARY ORIENTIATION TEST FOR COIUECE FTRESHMEN

|  | Part I, <br> Definition of Terms. 9 items <br> Range Mean Rank | Part II, <br> Interpretation of Information on Catalog Cards. 11 items <br> Range Mean Rank | Part III, <br> Choice of Subject Headings in Card Catalog. 9 items <br> Range Mean Rank |
| :---: | :---: | :---: | :---: |
| A 9126 | $\begin{array}{lll}5-9 & 6.96 & 6\end{array}$ | 3-11 8.23 3 | $\begin{array}{llll}4-9 & 7.12 & 5\end{array}$ |
| B $\quad 40 \cdot 40$ | $\begin{array}{lll}2-9 & 6.99 & 5\end{array}$ | 4-11 $7.80 \quad 5$ | 5-9 $7.50 \quad 3$ |
| C $40 \quad 30$ | $38 \quad 6.56 \quad 8$ | $3-11 \quad 7.33 \quad 8$ | 5-9 7.076 |
| D $40 \quad 32$ | $\begin{array}{lll}3-9 & 6.37\end{array}$ | 4-11 $7.53 \quad 7$ | $3-96.78 \quad 9$ |
| E-91-26 | 5-9 $7.12 \quad 2$ | $3-10 \quad 7.57 \quad 6$ | $\begin{array}{llll}4.9 & 7.00 & 7.5\end{array}$ |
| F 91-25 | 5-9 $7.88 \quad 1$ | $6-11 \quad 8.80 \quad 1$ | 7-9 8.44 |
| G $\quad 40 \quad 30$ | $3-9 \quad 7.03 \quad 3$ | 4-11 $7.13 \quad 9$ | 5-9 7.344 |
| H $40 \quad 29$ | $\begin{array}{lll}4-9 & 6.90 & 7\end{array}$ | 5-11 $8.10 \quad 4$ | $3-9 \quad 7.00 \quad 7.5$ |
| I *91" 32 | $6-9 \quad 7.00-4$ | $6-11 \quad 8.66{ }^{\circ} 2$ | 4-9 7.56 |
| Total: 278 | $\begin{array}{ll}2-9 & 6.91\end{array}$ | $3-11 \quad 7.87$ | $3-9.7 .29$ |

Ranks are related to the means.
All decimals have been rounded off to the second place.

In Part IV, Arrangement of Headings in the Card Catalog, consisting of five items and involving alphabetization, the pupil scores range from zero to five with a mean of 2.93. Individual schools show means ranging from 2.32 to 3.80 .

In Part V, Iiterature Reference Books, six items comprise the sub-test. Pupil scores range from zero to six with a mean of 3.46 . Individual schools show means ranging from 2.81 to 4.52.

Part VI consists of seven items related to sources of biographical information. Pupil scores range from zero to seven with a mean of 3.08. Schools show means ranging from 2.73 to 3.92 .

Part VII, Choice of Indexes, consists of nine items. Pupil scores range from zero to eight with a mean of 3.56. Schools show means ranging from 2.68 to 5.00 .

In Part VIII, Interpretation of Information in Periodical Indexes, twelve items, pupil scores range from zero to twelve with a mean of 8.56 with individual schools having means ranging from 7.84 to 9.52 .

TABLE VIb

## SUB-IEST, PARIS IV, V AND VI, RESUITS FOR NINE SENIOR SECONDARY SCHOOLS ON A IIBRARY ORIENIAITION TESI FOR COLTEGE FRESHMEN



Ranks are related to the means.
All decimals have been rounded off to the second place.

SUB-IESI, PARIS VII, VIII AND IX, RESUTMS FOR NINE SENIOR SECONDARY SCHOOLS ON A IIBRARY ORIENPIATION TEST FOR COILFGE FRESHIEN

|  | Part VII, <br> Choice of Indexes. 9 items <br> Range Mean Rank | Part VIII, <br> Interpretation of Information in Periodical Indexes. 12 items <br> Range Mean Rank | Part IX, Abbreviations. 12 items <br> Range Mean Rank |
| :---: | :---: | :---: | :---: |
| A 91.26 | $2-8 \quad 4.15 \quad 2$ | 5-12 $8.65 \quad 4$ | $1-9 \quad 5.43 \quad 4$ |
| B $40 \quad 40$ | $0-8 \quad 4.07 \quad 3$ | $0.12 \quad 8.40 \quad 6$ | 0-11 $5.29 \quad 5$ |
| C 40. 30 | $\begin{array}{lll}0-7 & 2.87 & 8\end{array}$ | $\begin{array}{llll}0-12 & 7.87 & 8\end{array}$ | $\begin{array}{llll}0-8 & 4.33 \quad 9\end{array}$ |
| D $40 \quad 32$ | $1.6^{\prime \prime} 3.22 \quad 6$ | $\begin{array}{llll}5-11 & 8.30 & 7\end{array}$ | $1-8 \quad 4.94-8$ |
| E $91-26$ | $1-7 \quad 3.81 \quad 4$ | $1-128.50 \quad 5$ | $2-9 \quad 5.12^{-\cdots}$ |
| F-91-25 | $0-8 \quad 5.00 \quad 1$ | 8-12 9.521 | $4-11 \quad 7.481$ |
| G ${ }^{-140} \quad 30$ | $1-5 \quad 2.68 \quad 9$ | $\begin{array}{lll}1-12 & 7.84 & 9\end{array}$ | $\begin{array}{llll}1-11 & 4.95 & 7\end{array}$ |
| H-40-29 | 0-7 $3.52 \quad 5$ | 6-12 $9.14 \quad 3$ | 0-9 $\quad 5.45 \quad 3$ |
| I 913 | $0-7 \quad 3.12^{\cdots} 7$ | 7-11 $9.35 \quad 2$ | $2-10{ }^{5} 5.91{ }^{-}$ |
| Total: 278 | $0.8 \quad 3.56$ | 0-12 8.56 | $0-11-3.38$ |

Ranks are related to the means.
All decimals have been rounded off to the second place.

The final sub-test, Part IX, Abbreviations, twelve items, shows extremely low results despite the fact that the abbreviations are those commonly used in English and in general reference works and also because the test is un-timed. Pupil scores range from zero to eleven with a mean of 5.38 , while individual schools have means ranging from 4.33 to 7.48.

Results of the total test are presented in Table VId. The range for two hundred seventy-eight subjects is from twelve to seventytwo with a mean of 49.08. Libraries $A, B, F, H$, and $I$ exceed the mean for the total number of subjects tested.

TOTAL TEST RESUITS FOR NINE SENIOR SECONDARY SCHOOLS ON A IJBRARY ORIENIATION TEST FOR COLLEGE FRESHMEN

|  |  |  | Total Test 80 items |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| A | $91$ | 26 | 35-68 | 50.50 | 3 |
| B | 40 | 40 | 31-69 | 49.37 | 5 |
| C | 40 | 30 | 28-58 | 44.63 | 9 |
| D | 40 | 32 | 33-60 | 45.97 | 7 |
| E | 91 | 26 | 31-64 | 48.31 | 6 |
| F | 91 | 25 | 32-72 | 59.32 | 1 |
| G | 40 | 30 | 12-63 | 45.03 | $\overline{8}$ |
| H | 40 | 29 | 40-67 | 50.03 | 4 |
| I | 91 | 32 | 37-62 | 51.47 | 2 |
|  | tal: | 278 | 12-72 | 49.08 |  |

Ranks are related to the means.
All decimals have been rounded off to the second place.

## CHAPIER VI

## RESUITS OF CORRELALION SIUDIES

Correlation coefficients were computed. For Tables VII to XI inclusive, at the .05 level of significance for onemtailed test. The critical value of rho for nine cases is .600 .

Rank correlation for Part A, Interview Questionnaire and the test mean ranks for each school is presented in table VII. A low positive correlation of .23 is shown to exist but it is not significantly different from zero.

TABLE VII
RANK CORRELAITION OF PARI A, QUESIICNNAIRE AND TOTAL TEST NEANS

| Ranks: Total |
| :--- |
| Tibraries Questionnaire Test Means |



An even lower positive correlation was found to exist between Part B, Library Instruction and Use and the test mean ranks,

Table VIII. The correlation of .07 is not significantly different from zero.


A low negative correlation, shown in Table IX, was found between the library unit and the test mean ranks. The number of paired ranks may have affected the final result. The negative correlation of -.03 is not significantly different from zero.

TABIE IX
RANK CORRETATION OF PARI C, QUESIIIONNAIRE AND TOIAL TEST MEANS
$\left.\begin{array}{ccc}\hline & \begin{array}{c}\text { Part C, }\end{array} \\ \text { Ifibraries: } \\ \text { Questionnaire }\end{array} \begin{array}{c}\text { Total. } \\ \text { Test Means }\end{array}\right]$

The highest positive correlation in this study, .30, although not significantly different from zero, exists between the collection, Part D and the test mean ranks as presented in Table X.

TABIE X
RANK CORRETARION OF PARI D, QUESTIONNAIRE AND TOIAL TEST MEANS

|  | Part D, Ranks: <br> Fibraries | Total <br> Questiomaire |
| :---: | :---: | :---: |
| Test Means |  |  |

Total interview ranks were correlated with the test mean ranks with a resulting low positive rank correlation of .24, as shown in Table XI.

TABLE XI
RANK CORRELAATION OF QUESITIONNAIRE TOTAL SCORE RANKS AND TOTAL TEST MEAN SCORE RANKS

| Total Score Total |
| :--- |
| Tibraries Questionnaire Test Means |


| A | 7 | 3 |
| :--- | :--- | :--- |
| B | 4.5 | 5 |
| C | 6 | 9 |
| D | 8.5 | 7 |
| E | 8.5 | 6 |
| F | 2 | 1 |
| G | 1 | 8 |
| H | 3 | 4 |
| I | 4.5 | 2 |

It is interesting to note that library $F$ attained a first rank on both Part $A$ of the questiomaire and the total test mean. Iilbrary G, on the other hand, ranks eighth place on the total test and varies on the questionnaire from: Part A-six; Part B-four and a half; Part C-mene; Part D-one; and in the over all questionnaire as one.

# SUMMARY AND CONCLIJSIONS 

## I PURPOSE

For this study, three purposes provided the framework. One was to ascertain the qualitative and quantitative standards of nine senior secondary school libraries by means of an interview questionnaire with school librarians. Since the literature indicated that no model had been designed and validated as an instrument to measure these standards, a questionnaire was built, incorporating the criteria employed by the American Iilbrary Association Standards of 1960 and the proposed standards for school libraries in British Columbia, draft form, 1965. Weightings were arbitrarily assigned to the responses in the light of the foregoing standards.

The second was to test the students' knowledge of the use of books and libraries by means of the test: A Iibrary Orientation Test for College Freshmen.

The third was to determine if a positive relationship existed between the qualitative and quantitative standards of senior secondary school libraries and the students' knowledge of the use of books and libraries.

## II PROCEDURE

An interview questionnaire was used to ascertain the qualitative and quantitative standards of nine senior secondary school libraries in three British Columbia school districts. The questionnaire consisted of four major divisions. Part A was designed to determine the qualifications of the librarians. Part B was used to determine the extent of instruction in the use of books and libraries given in these senior secondary schools. Part C was used to determine the facilities of each of these libraries, and Part D was used to determine the range, quantity and appropriateness of each library's book and non-book collection. The questionnaire was completed during an interview with each of the nine librarians. The scores were tabulated for each of the four sections and for the questionnatre as a whole. Rank orders were obtained separately for each of the four sub-sections and for the total questionnaire.

To a group of grade twelve students on academic programme A Iibrary Orientation Test for College Freshmen was administered under standard testing conditions in each of the nine senior secondary schools. The test consisted of nine sub-tests with a total score of eighty. Test results were tabulated for each of the nine sub-tests and for the total test for each of the nine schools. Rank orders were obtained separately for each of the nine sub-tests and for the total test scores.

Fank order correlation coefficients were computed separately for the four parts of the questionnaire and for the total test means; and also for the total test mean ranks and the total questionaire score ranks.

## III CONCLIUSIONS

Qualitative and quantitative standards. There was found to exist an appreciable range of differences in the qualitative and quantitative standards of the libraries examined in this study.

Student test results. The range of twelve to seventy-two points on the eighty item test, A Ifbrary Orientation Test for College Freshmen with a mean of 49.08 for two hundred seventy-eight subjects from grade twelve students on an academic progranme in nine senior secondary schools is indicative of a wide range of the students' knowledge of the use of books and libraries.

Rank correlation. In this study the lowest relationship was found to exist between the library unit and the total test mean ranks ( -.03 ), while the highest relationship, ( +.30 ), was between the collection and the students' knowledge of the use of books and libraries. The relationship between the total questionnaire ranks and the total test mean ranks, in this study, was found to be low but positive (+. 24 ). The rank correlations, as found in this study, were not significantly different from zero.

## IV DISCUSSION OF RESUITS

The results of the questiomaire used in this study indicate that although the libraries, as a whole, have trained personnel and a basically adequate reference collection, no provision is made to instruct grade twelve students in the use of books and libraries.

The test results are indicative of the students' lack of knowledge in the use of books and libraries. The unfamiliarity with the books listed in Part VI, Sources of Blographical Information and Part VII, Choice of Indexes, could be attributed to the American bias of the test; while Part IX, Abbreviations, shows a lack of understanding, by the students tested, of abbreviations commonly used in English and reference books.

The slight positive correlation of .24 , as found according to the limits of this study, between qualitative and quantitative standards and the students! knowledge of the use of books and libraries was not signtficantly different from zero. The present result reflects the need for contimed research and strongly suggests direct action on the part of teachers and libramians.

## V FURIHER SIUUY

Future studies in this field should elaborate on the methods, techniques and procedures for the teaching of the use of books and libraries.

The present study could be expanded to include a larger sampling in a greater rumber of school districts. The questiomaire could be,
improved by the addition of more items to include variables not considered in this study. In Part A, Iibrarians, questions could be added related to the librarian's procedure for the teaching of library skills. For example, has the libramian developed and used a system for the formal teaching of the use of books and libramies.

A study could be undertaken to ascertain the degree of effectiveness of the student-wibrarian relationship.

Part B, Iibrary Instruction and Use, of the present questionnaire could be expanded to include questions on the attitudes of supervisors, administrators, and teachers towards library instruction and use.

Part D, Collection, might be expanded to include reference books related to each subject area taught in the school.

A further study might involve the construction and standardization of a test on the use of books and Iibraries for Canadian senior secondary schools.

An investigation could be made using the instruments of the present study in areas where formal instruction is already being given.

A valuable study might result from an experiment involving controlled groups with methods and/or materials in the teaching of the use of books and libraries to determine the effectiveness of an organized programme of instruction in library techniques.

The foregoing suggestions for further study and the results of the present investigation indicate the need for increased investigation of the qualitative and quantitative standards of senior secondary school libraries and the contributing factors related to the students' knowledge of the use of books and 1ibraries.

BIBIIOGRAPHY

## BIBITIOGRAPHY

American Iibrary Association. American Association of School Librarians. Standards for School Iibrary Programs. Chicago, American Iibrary Association, 1960.

Anderson, H. E. Sandia Corporation, Alburquerque, New Mexico. 1620 General Program Library, Distat (Distribution of Statistics). n. d.

Bermer, Elsa. Integrating Iibrary Instruction with Classroom Teaching at Plajnview Junior High School. Chicago, American İbrary Association, 198.

Bonn, George S. Training Laymen in the Use of the Library. RutgersThe State University, New Brunswick, N. J., 1960. (The State of the Library Art, ed. Ralph R. Shaw, vol. 2, part 1.)

British Columbia. Department of Education. Division of Curriculum. Administrative Bulletin for Secondary Schools, 1961. Victoria, Queen's Printer, 1961.

British Columbia. Department of Education. Division of Curriculum. Administrative Circular, April, 1964. Victoria, Queen's Printer, 1964.

British Columbia. Department of Education. Division of Curriculum. Iibrary Manual for the Public Schools of British Columbia. Victoria, Queen's Printer, 1955.

British Columbia. . Department of Finance. British Columbia Financial and Economic Review. Victoria, Queen's Printer, July, 1963.

British Columbia.... Royal Cormission on Education. Report of the Royal Commission on Education. Victoria, Queen's Printer, 1960.

British Columbia. Teacher-Librarians' Association. A Brief to Support Recommendations of the Executive Committee of the British Columbia Teachers' Federation for the Improvement of School Iilbrary Services to Students. 1963.

Bryan, James E. "Students, Libraries and the Educational Process." American Library Association Bulletin. vol. 56 (September 1962), pp. 707-15.

Buros, Oscar Krisen. Mental Measurements Yearbook, Fifth Edition. Rutgers University Press, New Brunswick, New Jersey, 1958.

Canada. Canadian Iibrary Association. The Present State of Library Service in Canada; A Program of Ehquiry for 1960/61. Ottawa, 1962. (Part IA, and Part IIA).

Darling, Richard L. "Impressions of B. C. School Libraries." British Columbia Iibrary Quarterly. vol. 21 (January 1958), pp. 39-43.

Darling, Richard L. et al. Pacific Northwest Iibrary Association Development Project Reports. Seattle, University of Washington Press, 1960. (Elementary and Secondary School Iibraries of the Paciric Northwest, ed. Morton Kroll, vol. 2).

Darling, Richard L. Survey of School Iibrary Standards. Washington, U. S. Department of Health, Education and Welfare, 1964.

Darling, Richard I. - "Tomorrow's School and Today's School Librarian." Pacific Northwest Iibrary Association Quarterly. vol. 8 (April 1964), pp. 183-88.

Egoff, Sheila A. and Gibson, Barbara. School Library Service in the School District of New Westminster: a Study of Book Collections and School Inbrary Service. Vancouver, 1963. Nimeographed.

Ellison, Shirley E. Iibrary Service to Children in the Rural Areas of British Columbia. Seaitle, University of washington, 1952. (Thesis M. L. University of Washington. Photocopy of the original typescript.)

English, Moira L. A Study of Library Service to Sparsely Populated Areas with Special Reference to Northem British Columbia. Seattle, University of Washington, 1953. (Thesis M. L. University of Washington. Microfilm.)

Feagley, Ethel M. et al. Manual of Directions for: A Tibrary Orientation Test for College Freshmen. New. York, Bureau of Publications, Teachers College, Columbia University, 1955.

Henne, Frances, et al. A Planning Guide for the High School Jibrary Program. Chicago, American Iibrary Association, 1951.

Holmes, Marjorie C. Iibrary Service in British Columbia; a Brief History of Its Development. Victoria, Public Library Commission of British Columbia, 1959.

Horney, Peggy Campbell. Study of the Effect of Trained Tibrary Personnel on the Achievement of Standards of School Inibrary Service. University of North Carolina, 1964. (Thesis M. S. in. L. S. University of North Carolina) inter-library loan.

Kennson, Mary Frances and Doyle, Leila Ann. Planning School Tibrary Development; a Report on the School Library Development Project, February 1, 1961-uuly 31, 1962. Chicago, American Iibrary Association, 1962.

Lanning, Walter. "Standards for School Libraries in British Columbia." British Columbia Library Quarterly. vol. 21 (January 1958), pp. 16-21.

Iogasa, Hannah. The High School Iibrary: its Function in Education. New York, Appleton, 1928.

Rossoff, Martin. The Library in High School Teaching. New York, H. W. Wilson, I96I.

Rothstein, Samuel. "Our Day in Court: British Columbia Iibrary Association Before the Royal Commission on Education. ${ }^{\text {EI }}$ British Columbia Iibrary Quarterly. vol. 22 (April 1959), pp. 25-29.

Trinkner, Charles L. ed. . Better Iibraries Make Better Schools; Contributions to Iibrary Interature \# 4. Hamden, Shoe String Press, 1962.

Wilkins, John B. "Jibrary Instruction = Curriculum Must." National Association of Secondary School Principals Bulletin. vol. 43 (November 1999), pp. 130-32.

APPENDIX A

Interview Questionnaire re: Qualitative and Quantitative Standards of Senior Secondary School Libraries in Three British Columbia School Districts.

District $\qquad$ Library $\qquad$
A. Librarians:
a) Teaching certificate held: P.C., P.B., P.A., Other $\qquad$
b) Bachelor of Library Science Degree and Teaching Certificate. yes-2, no-0
c) Bachelor of Library Science Degree without Teaching Certificate. yes-1, now
d) Teaching degree and library major. yes, no.
e) Other training: (qualify)
f) Years of experience:
i) as a teacher
(I for 2 years or more in each case)
ii) as a school librarian $\qquad$
iii) in present position \% of time spent in the library.
$(1$ between $50-75 \%)$
2 when in over $75 \%$ )
2
h) Do you act as a substitute teacher? never, sometimes, regularly.
i) Do you register a home-room class? never, sometimes, regularly. $0 \quad 1$ 2
j) Do you have clerical help? never, sometimes, regularly.
k) Do you have professional assistance? never, sometimes, regularly.
B. Library Instruction and Use:
a) Library hours from $\qquad$ to $\qquad$ . (School hours - 1; more - 2)
b) Is the library closed during the day? Specify: (noon only -1; other-0)
c) Are grade twelve classes regularly scheduled to the library? never-0, sometimes-1, regularly-2.
d) Do grade twelve teachers consult with the librarian when planning class assignments involving the use of library materials? 2 l yes, no, sometimes
e) Do grade twelve student groups work independently on class assignments involving library materials, in the library, during the school day? never-0, sometimes-1, regularly-2.
f) Is there an organized system of instruction in books 〕. 0 and library for grade twelve students?
yes, no
g) Do both teachers and librarian prepare correlated instruction to meet the library needs of the grade twelve students?
never-0, sometimes-1, regularly-2
h) Are grade twelve students tested on their knowledge of library skills? never-0, sometimes-1, regularly-2
i) Are books and other library materials selected by the librarian in consultation with the subject matter teachers?
yes-2, no-0, sometimes-1
C. Library Unit:
a) Total school enrollment $\qquad$ (no score)
b) Library seating arrangements for
(1 for $5 \%, 2$ for up to $10 \%, 0$ for less than $5 \%$ of enrollment)
c) Is the library used as a home-room? yes, no, sometimes
d) Is the library used as a study hall? never, sometimes, always
e) Is the library used as a subject-matter classroom? yes, no
f) Is there a card catalogue with author, title and subject cards filed in one alphabet?
yes-1, no-0
g) Does the library have conference room(s)? yes, no

No. of rooms 1 for each room;

Seating for no. of students 1 for every 10 students.
D. Collection:
a) Total library book stock, including hard-cover and paperback books:
( 0 for less than 5 per student; 1 for 5 per student; 2 for 6-10+ per student)
b) Number of different titles, encyclopedias from 1960 on:
i) general
(4) ii) special $\qquad$ (1+)
c) Number of different titles, unabridged dictionaries $\qquad$ (3)
d) Does the library have the following special dictionaries:
science $\qquad$ , mathematics $\qquad$ , mythology $\qquad$ , biography $\qquad$ , Iiterature _, foreign language (French, Spanish, Latin, German), geographical , music , others:
(1 for each area as checked)
e) Number of different titles, atlases:
i) general $\qquad$ (1+),
ii) historical__(I+), iiii) economic___(1+), special (1+)
f) Yearbooks, 1964: World Almanac , Whitaker's Almanack Canada Yearbook, Statesman's Year-book $\qquad$ , Information Please $\qquad$ - (I for each one checked)
g) Indices: Abridged Readers' Guide: yes, no Canadian Index: yes, no

Others: (1 for each listed)
h) Vertical file: yes, no
i) Picture file: yes, no
j) Map file (National Geographic maps, etc.): yes, no
k) Number of different periodicals:
( 1 for 30-49; 2 for 50 and over)

1) Number of different newspapers: daily __ weekly
( 1 for 1-3 daily papers; 1 for 1 weekly)
m) Money appropriation per pupil for books: \$___(1 for ${ }_{1}^{\$ 4-\$ 6)}$
n) Additional money appropriation for non-book materials: yes, no
o) Does the library handle film and film strip materials? yes, no
p) Does the library handle recordings for music, drama, l 0 speech, literature, foreign languages? yes, no

Interviewer's Comments:

APPENDIX B

DIRECIIONS FOR ADMINISIERING: A IJBRARY ORIENIATION TEST FOR COLIEGE FRESHIMEN.

1. Distribute answer sheets.
2. Tell students to place circled code for the school ( $A, B, C, D, E, F, G, H, I$ ) in the space after NANE. Students names are not required.
3. In the Course and Section space have students write $M$ if male, $F$ if female.
4. Instruct students to WRITE ALJ ANSWERS ON THE ANSWER SHEFIS. Do NOT write in the test booklets.
5. Distribute test booklets.
6. Instruct students to read the directions carefully; to do all questions they are able to do and then to return to the more difficult ones.
7. This is NOT a timed test. Usual testing time is between 45 and 50 minutes depending upon the individual student.
8. Students turn in test booklets and answer sheets as they finish the test.
9. Bundle test booklets and answer sheets and return in the stamped, self-addressed package.
