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AN EVALUATION OF THE
JUNIOR HIGH SCHOOL READING LABORATORIES
IN THE DEARBORN PUBLIC SCHOOLS

by

Donald Paul Mys

A DISSERTATION

Submitted to the Office for Graduate Studies,
Graduate Division of Wayne State University,
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for the degree of

DOCTOR OF EDUCATION
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CHAPTER I

THE PROBLEM

INTRODUCTION

One of the current trends in reading today is the application of the "systems approach" to instruction. The ability to communicate by means of language is a fundamental necessity in today's society. Reading is one form of communication that must be individually developed in our pupils. Moreover, students, parents and school personnel are concerned about schools providing effective individualized instruction. Selection of students and appropriate instruction is an issue. Martha J. Maxwell states, "If the reading program is a voluntary one, students who enter it may be more highly motivated than those who have not sought help even though they need it equally as much."¹ On the other hand, it can be argued that there are very few students who improve their reading skills regardless of their ability or required attendance in an appropriate reading situation or environment.

The reading program in the Dearborn Public Schools has been built around the inter-relationships between reading and other aspects of child development, including principles of

¹Martha J. Maxwell, "Evaluating College Reading and Study Skills Program," Journal of Reading, Volume 15, Number 3, (December, 1971), p. 216.

psychology, physiology, and sociology. The major goal is that the learner must become able, to a certain degree, to understand written language. Other subsidiary goals include (1) to associate written language symbols with oral language symbols in meaningful contexts; (2) to develop strategies in order to select the most useful cues during the reading process; (3) to become proficient in critical reading; (4) to develop reading rates to fit the purpose for reading and the material read; (5) to recognize and respond to the signals of structural meaning in written language; and (6) to become a mature, versatile, self-directed, life-time reader.²

Kennedy and Halinski, contending that student feelings toward reading are important, state that "A positive attitude toward reading on the part of the students must be present before the goal of making students life-time readers can be realized."³

The development of positive attitudes toward reading, therefore, is an important objective for any reading program. Pauline Hodges emphasized this point even further when she stated, "Perhaps the most important benefit of such a program

²Unpublished "Dearborn Public Schools Reading Goals and Objectives," Date unknown. (Mimeographed)

³Larry D. Kennedy and Ronald S. Halinski, "Measuring Attitudes: An Extra Dimension," Journal of Reading, Volume 18, Number 7, (April, 1975), p. 519.

{Reading classes} is that the attitudes toward reading has changed significantly during the time it has been in operation."⁴

The measurement of student attitudes toward reading over a period of time is an important part of the evaluation plan.

Furthermore, questionnaires assessing students' attitudes toward the reading laboratory program can also serve to give students an opportunity to express their feelings about a program.

A "systems approach" to teach basic reading skills and to improve reading skills for students of all reading abilities is utilized in a reading laboratory. If students are given the opportunity to experience success in learning, they will accept the responsibility for learning, and will work to attain meaningful goals.⁵ This is the basic belief of a reading laboratory program.

BACKGROUND OF THE STUDY

As early as the late forties and early fifties, Dearborn has pioneered the concept of an individualized reading program.⁶

⁴Pauline Hodges, "Reading As An Elective In The English Program," Journal of Reading, Volume 18, Number 1, (October, 1974), p. 32.

⁵Walter Banks, "A Proposal for a Reading Skills Development Laboratory For The Dearborn Public Schools, Dearborn, Michigan," Illinois: Psychotechnics, Inc. (May, 1973), (Unpublished Photostated Report), p. 1.

⁶Fred Schreiber, "Reading Laboratories: Status Report," Dearborn, Michigan: Dearborn Public Schools, (June, 1974), (Unpublished mimeographed report). p. 2.

The Reading Center, located at the William Ford School, was established for the training of Dearborn teachers in reading techniques for children of a wide range of abilities. Training in testing which included various diagnostic and prescriptive techniques was also provided. Teachers made kits of individualized multilevel materials for their classrooms to serve a wide range of student abilities, interests, and reading levels.

In the 1960's three reading specialists were employed to serve as "in-house consultants" for the ten junior high schools in the Dearborn School system.⁷ These teachers worked primarily with seventh grade students, and provided direct classroom instruction to students with the greatest need. Moreover, the reading teachers worked with the classroom teacher of each child to insure reinforcement and long-range instructional development techniques. In 1971 the program was altered, and "target schools" were identified where the greatest need for reading services existed. Three or four different schools were selected each year. This resulted in the reading teachers spending more time in fewer buildings, working as a team with both students and staff members. They provided demonstration lessons and conducted workshops for the teachers each year.

⁷Ibid.,

During these "target school years" some junior high schools developed sheltered reading experiences for students in need of remedial instruction, with only minimal assistance from the reading specialists. Such sheltered programs were also initiated in each of our high schools in order to assist less than adequate readers.⁸

Upon the successful passage of the millage in the Spring of 1973, a plan to develop a reading laboratory for each secondary school was implemented. The decision was made to teach reading skills through a systems approach via reading laboratories.

Each reading laboratory's goals and objectives were to be individually developed and based upon the students' characteristics, the instructional materials to be utilized, and the reading laboratory philosophy of the school.⁹ Participation of students was either voluntary or required. The length of time scheduled for the students in the reading laboratory was for ten or twenty weeks, or as needed. The reading program included students of low-average, average, and superior reading ability. Moreover, students "selected" and materials and equipment to be used were to reflect the school district and the individual school's reading laboratory philosophy and goals.

⁸Ibid.,

⁹Ibid., p. 4.

Almost immediately, resistance from the building instructional staff was encountered.¹⁰ Objections were raised as to the failure to involve them in the planning prior to making a decision to implement a curricular change of large magnitude.

The tentative implementation date of September, 1973, was rescinded after thorough discussion with the System-wide English Committee, and September, 1974, was set as the date for full implementation.

A Reading Laboratory Implementation Committee was established consisting of representatives from the English department, the guidance and counseling department, designated reading laboratory teacher, and the building administrator.¹¹ The purpose of this group was to determine the goals for their individual building laboratories after making a complete analysis of the test profiles of their students.

Opportunities to view and evaluate equipment and instructional material available for purchase were provided the personnel from each building. Numerous reading laboratory vendors displayed their wares, made presentations (both written and oral), and answered specific questions about their programs. Individual teachers examined the most promising materials in some depth, and prepared written evaluations

¹⁰Ibid., p. 3.

¹¹Ibid., p. 4.

to benefit the entire group. Upon request, supportive services of administrative personnel of consultation and of reading expertise were made available to individuals and building staffs.

Each individual building was encouraged to develop a laboratory, with materials and equipment to meet the range of student's reading abilities and characteristics which would best accomplish the goals and objectives they had established for the facility. Therefore, while similar in some respects, the laboratories would vary as to amount and type of hardware and software contained in each facility. A list of equipment and software materials for each reading laboratory can be found in the Appendix A.

Concurrent with the materials and equipment selected, each building principal submitted an inventory of his facility's needs. Most facilities required additional electrical wall outlets, painting, and/or furniture because of the nature of the reading equipment to be utilized.

Inservice training was provided through meetings with hardware and software vendors, outside reading specialists, teacher visitations to examine reading laboratory facilities and programs in other school districts, and workshops held with a focus upon diagnostic techniques, teaching strategies, student scheduling and laboratory maintenance.¹² Two representatives from each junior high building participated from

¹²Ibid., p. 6.

October, 1973, to May, 1974, in a series of four Wayne County Reading Council seminars of four and one-half hours each. These inservice activities provided the reading laboratory teachers with increased expertise in instructional techniques and reading background.

Throughout the second semester of the 1973-74 school year the laboratory and reading materials were utilized with various groups of children within the buildings. This trial period provided the reading laboratory teachers time for gaining experience and becoming familiar with the available reading laboratory materials and equipment. Although plans called for full operation of the reading laboratories in September 1974, some ordered materials did not arrive until the middle of the 1974-75 school year.

It should be noted that at the request of all reading laboratory teachers inservice meetings and workshops were continued during the following school years for sharing instructional techniques.

Moreover, articulation problems of feeder junior high school reading laboratory programs with receiving high schools were discussed. Two one-half day reading laboratory high school articulation meetings were scheduled for the 1975-76 school year. The English department chairman and the reading laboratory teacher from each high school feeder school met to standardize the methods of transferring information on those students exposed to the reading laboratory. One purpose of

the meetings was to develop an understanding of what laboratory materials each school used. This was done in an attempt to avoid needlessly duplicating students' experiences. The chairman of the department at the host school or the reading laboratory teacher therein acted as chairman for the meetings.

To facilitate the exchange of information on reading laboratories each reading laboratory teacher was requested to provide a written summary of the major materials and equipment available in his/her reading laboratory, a summary of the formal and informal testing procedures used, and a brief description of how the reading laboratory functioned within the school.¹³

Also, partial funding was requested through the State Reading Support Services Program for three schools during the past few years. Mean gains in excess of expected growth was reported on pre-post testing with such standardized tests as the Nelson Reading Test and the Stanford Diagnostic Reading Test.

STATEMENT OF THE PROBLEM

In the Spring of 1973 a decision was made to implement a "systems approach" to teaching reading skills (i.e., reading

¹³Secondary Systemwide English Curriculum Committee Minutes, "Released Time Proposal For Secondary English Articulation," Dearborn, Michigan: Dearborn Public Schools, (September 10, 1975), (Unpublished).

laboratory) in each of ten junior high schools located in the Dearborn Public Schools.

The goals and objectives for each of the reading laboratories were developed individually based upon student characteristics, types of reading materials and equipment to be employed and the school staff's philosophy. Some students "selected" for the reading laboratories were required to attend, while for other students it was an elective class. The range of students reading ability varied from low-average to superior. The reading laboratories, fully implemented in September, 1974, truly altered the basic strategy of reading instruction in the junior high schools. Students were exposed to the reading instruction in the laboratories for a ten week period. A few of the students either volunteered or were required to participate in the reading laboratory for a twenty week period. Some students were neither required nor volunteered to attend the reading laboratories.

Even though a variety of reading materials and equipment are utilized in each separate reading laboratory, it is not the intent of this study to evaluate each reading laboratory individually. The assumption is made, for this study, that the materials, equipment, instructional strategies and philosophy used are the most effective for the particular students attending each school. Therefore, the differences are not considered to be a variable in the total effectiveness of the reading laboratories in this study.

It will be the purpose of this study to examine the effect that the reading laboratories in the junior high schools have upon student's reading comprehension achievement. Furthermore, do the reading laboratories result in a positive change in student attitudes toward reading? Finally, does the voluntary or required attendance of the students in the reading laboratories make a difference in students achievement or attitude toward reading?

LIMITATIONS OF THE STUDY

Specifically, this study will restrict itself to grade nine students (1,575 students were pretested in Spring, 1975) in measuring gains in reading comprehension. And, since this study represents a program evaluation within the current school year, "affective" instruments will be administered only at the end of the 1975-76 school year. A random-clustered sampling of about 300 grade nine students in the junior high school will be pre and posttested during a ten week reading laboratory. All other grade nine students will be posttested only.

This reading laboratory evaluation is further limited by time constraints. June, 1976, represents the end of the first full year of the reading laboratories after instructional strategies have become established.

DEFINITION OF TERMS

Reading laboratory is a multi-media individualized instructional systems approach, during which activities are focused on dealing with vocabulary, improving word recognition skills, and developing oral language facility leading toward improvement in reading comprehension. Emphasis is placed on individualized reading diagnosis and prescription.

Cluster sampling is a sampling technique which involves dividing the population into clusters or areas (in this study each reading laboratory represents one cluster). Within each cluster students have the same chance of being randomly selected for the sample.

Cognitive evaluation is concerned with intellectual tasks-- from the simple recall of facts to original ways of combining, synthesizing, and evaluating new ideas and materials. Cognitive evaluation in this study involves an examination of students' reading comprehension of written materials.

Affective evaluation refers to assessing feelings or emotions of the students, and includes an examination of students' opinions of reading.

Low-achieving students are those grade nine students who achieved a percentile rank of thirty-three or less on the reading pretest. This represents the lowest one-third of student achievement as given by the national norm.

Middle-achieving students are those grade nine students who achieved a percentile rank between thirty-four and sixty-six, inclusive, on the reading pretest. This represents the middle one-third of student achievement as given by the national norm.

High-achieving students are those grade nine students who achieved a percentile rank of sixty-seven or higher on the reading pretest. This represents the highest one-third of student achievement as given by the national norm.

MAJOR HYPOTHESES TO BE ANSWERED

This study is concerned with the effectiveness of using a reading laboratory in each of ten junior high schools. A number of questions need to be answered.

1. Is the mean reading comprehension gain of grade nine students with no reading laboratory experience different than the mean reading comprehension gain of those with ten weeks in the reading laboratory?
2. Is the mean reading comprehension gain of grade nine students with no reading laboratory experience different than the mean reading comprehension gain of those with more than ten weeks in the reading laboratory?
3. Is the mean reading comprehension gain of those grade nine students with ten weeks of instruction in the reading laboratory different than the mean reading comprehension gain of those with more than ten weeks in the reading laboratory?

4. Do low-achieving grade nine students achieve an expected one year's reading comprehension gain over a one year time period?
5. Do average-achieving grade nine students achieve an expected one year's reading comprehension gain over a one year time period?
6. Do high-achieving grade nine students achieve an expected one year's reading comprehension gain over a one year time period?
7. Do grade nine students who take the reading laboratory as an elective class show a different gain in reading comprehension than those who are required to attend?
8. Is the grade nine female students' mean reading comprehension gain different than the mean reading comprehension gain of the grade nine male students?
9. Is there a difference in grade nine students attitude toward reading after having participated in a reading laboratory?
10. Is there a difference between the grade nine female students attitude toward reading and the grade nine male students attitude toward reading?
11. Is there a difference in attitudes toward reading between those students who "volunteered" to attend the reading laboratory and those grade nine students who were "required" to attend?

12. Does the reading laboratory have a differential effect upon the change of attitude toward reading of low-achieving, average-achieving, and high-achieving grade nine students?

CHAPTER II

REVIEW OF RELATED LITERATURE

The ability to read is widely considered to be one of the most significant of the basic skills. Reading skills and their instruction have clearly been an overriding concern among educators and parents, predicated, at the very least, on their being a prerequisite for all subsequent learning tasks.

It is hardly surprising to learn, therefore, that there has been more activity related to the teaching of reading than to the instruction of any other school subject. However, according to Harman, "There is not a universally accepted definition of what reading precisely is and consequently what the act of reading entails."¹⁴

W. John Harker in his article on reading comprehension states that:

"Comprehension is essentially a problem solving process. The student is expected to understand the reading selection for some particular purpose. To achieve this understanding, he must undertake a problem solving task. In performing this task the student's cognitive skills and abilities are mobilized in a manner unique to the particular comprehension task at hand. Thus the nature or the comprehension task determines the method for solving it. And since no two comprehension tasks are identical, the methods of solution differ."¹⁵

¹⁴David Harman, "Reading Tests," The National Elementary Principal, Volume 54, Number 6, (July/August, 1975), p. 81.

¹⁵W. John Harker, "Teaching Comprehension: A Task Analysis Approach," Journal of Reading, Volume 16, Number 5, (February, 1973), p. 379.

Harman points out that definitions of reading range from the relatively straightforward notion of decoding written symbols into their phonetic sounds, to the far more complex premise that reading requires the comprehension of written material. Harman expands on this in determining that all reading tests are concerned with degrees of comprehension by saying:

"Overall reading or comprehending ability consists of a wide variety of competencies. The following list of subtest titles, taken from different test batteries, identifies the type of competencies sought: Accuracy, Average Comprehension, General Comprehension, Speed of Comprehension, Specific Comprehension, Paragraph Meaning, Sentence and Word Meaning, Word Recognition, Vocabulary, Comprehension, and Rate of Reading.

The cognitive skills all relate to the derivation of meaning from the printed message. They consist of literal meanings and abilities to draw inferences from literal messages, evaluation of messages, recall, and appreciation. Because of a lack of clarity in the basic definition of reading comprehension, however, there is a wide variation in the tests purporting to measure it, just as there is in the materials that attempt to develop comprehension."¹⁶

However, standardized reading achievement tests are at best a reflection of the prevailing approaches and attitudes toward reading and the teaching of reading. Harman continues by stating that, "Without a doubt, reading entails affective as well as cognitive and motor behaviors. Confining testing and instruction to the latter skirts what might, indeed, be the main component of reading capability."¹⁷

¹⁶Harman, op. cit. p. 83.

¹⁷Harman, op. cit. p. 87.

Pauline Hodges discussing the results of reading as an elective in the English program feels that, "Perhaps the most important benefit of such a program is that the attitude toward reading has changed significantly during the time it has been in operation. Reading classes are considered important and interesting ones in the elective program."¹⁸ Moreover, C. Glennon Rowell stresses the importance of affective behavior when he states that, "The development of positive attitudes toward reading is an important objective of the reading program."¹⁹

"The decade of the seventies has already been deemed the "Accountability Era" and in many ways parallels education's "Efficiency Era" of the early 1900s."²⁰ The press of accountability often results in a simplistic view of reading assessment relying primarily on "objective measurement" by achievement tests. However, there is a very real risk that the objectives of measurement instruments will come to determine the objectives of instruction. Venezky continues by saying, "A reading program is a complex matter, the success of which is based not on the ultimate truthfulness of any

¹⁸Pauline Hodges, "Reading As An Elective In The English Program," Journal of Reading, Volume 18, Number 1, (October, 1974), p. 32.

¹⁹C. Glennon Rowell, "An Attitude Scale For Reading," The Reading Teacher, Volume 25, Number 5, (February, 1972), p. 447.

²⁰Richard L. Venezky, "Testing In Reading--Assessment And Instructional Decision Making," National Council of Teachers of English, Urbana, Illinois, (May, 1974), p. vii.

one hypothesis, but on many different hypotheses, opinions, and assumptions."²¹ The implication is that every responsible teacher and every responsible school system should develop assessment procedures for continual monitoring of their reading programs.

Furthermore, Venezky emphasizes the importance of realistic reading objectives when he states,

"Knowing whether or not a reading program is achieving the prescribed educational objectives at a given time is important, but more important for the continual achievement of educational obligations is having a reading program that is well understood by its instructors and adaptable to changes in children's backgrounds and interests."²²

Venezky points out that educators should keep in mind that those few inner-city schools which have been identified as having succeeded in teaching reading have developed their programs over periods of time ranging from three to nine years, and that these programs are generally composed of a variety of components selected and adapted by each school.²³ Furthermore, major improvements in reading ability should not be expected after only a year or two of program use.

Venezky strongly suggests that it is equally important to assess resource allocations as well as assessing

²¹Ibid. p. 16.

²²Ibid. p. 16-17.

²³Ibid.

implementation when he states,

"Reading programs are complex matters involving physical facilities, materials, instructors, management, assessment, and students. It is not possible to establish how some of these components vary in relation to each other. Good facilities are important for instruction, for example, but how important? Is extra space necessary for education or is it an extravagance? Similarly, do the tape recorders, projectors, and other electro-mechanical devices contribute to educational goals in relation to their costs?"²⁴

Perhaps it is not so important to know precisely what the contributions of either facilities or equipment are as it is to realize that these and many other factors are components of any real instructional program and may contribute to its success or failure. Some reading programs work very well under experimental conditions but fail soon after wide-scale implementation due to their excessive demands on school resources. No matter what the initial outcomes of a program are, those who are responsible for instructional decisions must ask whether or not the program can be sustained with the resources which the school is willing to allocate. A program may require extra aides, extra materials, extra teacher time, or teacher abilities which are not immediately available. Furthermore, Venezky points out that a program that is successful in one school may not be successful in another, no matter how similar their students may be, because instructional capacities differ widely.²⁵

²⁴Ibid. p. 20.

²⁵Ibid.

It is important, therefore, to know what resources are required for sustaining a particular reading program before it is adopted. No matter how important anyone feels reading is, a school or school system is forced to allocate its limited resources to achieve a variety of goals and therefore must limit the time, money, and personnel allocation for reading--this is an economic fact.

Moreover, the system which produces the largest gains or the highest number of masters of particular skills may not be the best program if it requires an excessive allocation of resources. What is excessive in terms of monetary value of staffing is a matter for each school or school district to decide.

There are a very limited number of research studies available relating specifically to the reading laboratory. However, this writer will discuss those that are pertinent and will also include other selected studies closely concerned with the important topics related to this study.

In an evaluation of a junior high school reading improvement program Cawley and others indicate that studies on reading improvement often yield conflicting results.

They state:

"In some, improvement is noted, in others, experimental groups attain levels of performance which are not significantly greater than those of control groups. There is some evidence that gains may be obtained in specific areas related to reading, but that the composite reading profile of the treatment groups will fail to show improvement in total. When experimental groups do not demonstrate significantly higher performance than controls, this is frequently viewed as failure of the treatment program. However, it may be that the instrumentation used and the range of variables analyzed are insufficient for discriminatory capacity or score."²⁶

Martha J. Maxwell offers these comments on conflicting results:

"Although the majority of studies reporting effects of reading and study skills programs on improvements in grades shows favorable results, there remains the question of the representativeness of the reported studies since editors undoubtedly view studies with positive results as more desirable for publication than those with negative results."²⁷

Cawley, reviewing the work of Rasmussen and Danne, notes that even though the subjects in their longitudinal evaluation of a junior high school corrective reading program failed to make significant academic gains, changes in attitude toward school and a lower dropout rate were observed. Cawley continues saying that, "A program which emphasizes reading may be as important a factor as the utilization of a specific procedure."²⁸

²⁶John R. Cawley, Jerry Chaffin, and Herbert Brunning, "An Evaluation of a Junior High School Reading Improvement Program," Journal of Reading, Volume 9, Number 1, (October, 1965), p. 26.

²⁷Maxwell, op. cit.

²⁸Cawley, op. cit.

Cawley concluded that:

"That results indicate that a reading improvement program conducted by teachers who concentrate their effort in this area and who structure a program adjusted to the needs of students can yield significant improvement. Further study (1) utilizing control groups, (b) testing the influence of specific instructional materials, (c) employing paradigms wherein subjects are treated for varying periods of time, and (d) involving subjects with different intellectual capacities and degrees of reading impariment are necessary."²⁹

Furthermore, Martha J. Maxwell points out that if the reading program is a voluntary one, students who enter it may be more highly motivated than those who have not sought help even though they need it equally as much. She states that, "Voluntary programs typically attract a more heterogeneous group of students including some with honor grades as well as those with low achievement."³⁰

However, if a reading program is restricted to low-ability or low-achieving students, the problem of stigma being associated with the service may be a real one. This may affect the students' progress in the course and their attitudes toward the reading specialists who run it. Maxwell suggests benefits of specific ability groups when she states:

"Examining how long high-average achieving students and low-achieving students remain in the program and what they accomplish does have value in developing insights into the characteristics of students who profit from the program and in planning ways it could be improved."³¹

²⁹Ibid. p. 28.

³⁰Maxwell, op. cit. p. 219.

³¹Ibid.

Herbert Wartenberg and others who developed a full-time reading center within a public school setting with individualized instruction for children with severe reading learning disabilities made these concluding statements:

"From a testing point of view, enough students made significant gains to substantiate the original purposes of utilizing specialized techniques and the establishment of a full-time, small group laboratory school. Test results however, cannot indicate the non-academic aspects that were so vital a part of the program.

Each student who entered the program came with a sense of failure. Through the use of material at instructional levels, and through the direct support of his teacher feelings of success and competency emerged. While those positive feelings were difficult to measure, they were evidenced by the attitudes and desires of the student."³²

The desire to individualize reading has led to individually prescribed learning center programs. These programs enable teachers to give pupils with different reading skills achievement opportunities to expand and apply their reading skills. In the learning laboratory students can work continuously, independently or in pairs, with little teacher direction and with a variety of multimedia and multimodal programs.³³

³²Herbert Wartenberg, Lilyan Hanchey, and Maurine Locke, "Developing a Full-time Reading Center Within A Public School Setting," The Reading Teacher, Volume 24, Number 6, (March, 1971), p. 536.

³³Frances Bennie, "Pupil Attitudes Toward Individually Prescribed Lab Programs," Journal of Reading, Volume 17, Number 2, (November 1973), p. 108.

Furthermore, Harry W. Sartin concurred with Bennie when he concluded that, "There is not the slightest doubt about the need for differentiating reading instruction to fit a wide range of pupil abilities."³⁴

To meet the individual need of the child, Victoria J. Collins reports that the Palm Beach County School System in Florida is using a systems approach to teach basic skills in learning skills laboratories. The key to the system lies in careful diagnostic testing and a systems package consisting of:

1. the diagnostic skill assessment kit for each student;
2. a prescription/contract for each student based upon his diagnosis;
3. the general lesson program for each student, and
4. the index of materials available to fill the prescription/contract.³⁵

Psychotechnics equipment such as the Tachomatic 500, T-matic 150, and Shadowsopes were used. All of the laboratories were equipped with Language Masters, cassette tape recorders and players, record players, and filmstrip projectors. In addition, a wide variety of high interest, low readability level materials were provided. Achievement mean gains, using the Gates-MacGinitie Reading Test in both

³⁴Harry W. Sartin, "Individual Reading--An Evaluation," Resources in Reading-Language Instruction, Robert B. Ruddell, Evelyn J. Ahern, Eleanore K. Hartson, and Jo Ellyn Taylor, (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1974), p. 197.

³⁵Victoria J. Collins and John L. Spagnoli, "A Systems Approach in Learning Skills Laboratories," Florida Reading Quarterly, Volume 7, Number 3, (June, 1971), p. 17.

Vocabulary and Comprehension were reported. Junior high school students gained an average of 1.04 grade level years and the high school students gained 1.49 grade level years over the duration of the one year program. In addition a greater number of positive self-concept changes, measured by an informal self-concept inventory, than negative self-concept changes resulted.³⁶

Ida McCormick and others reported the success of improving the reading achievement level of students who have had years of previous failure in school. The students came from homes where the importance of school success is not emphasized. The yearly mean gain for the 243 students (grade seven) was 1.1 years compared with an annual mean gain of .6 years over the previous seven years of school. McCormick commented that:

"Teachers saw a definite transfer of improved attitude, achievement and self-concept from the reading classes to other subject areas. Perhaps the most significant implication of this program is that junior high teachers, unprepared in the teaching of reading but assigned that job, may build both skill and confidence by remediation which resulted from the careful testing and grouping program, the services of a reading specialist acting as a part-time consultant, and the use of a basic developmental reading program."³⁷

In another study by Helen Reidelberger serendipitous results of a reading program were reported. "The teachers saw

³⁶ _____, "Follow-up On Learning Skills Laboratories," Florida Reading Quarterly, Volume 8, Number 2, (March, 1972), p. 29-30.

³⁷ Ida McCormick, Barbara O'Rand and Lawrence Carrillo, "Improving The Reading Achievement Level in a Junior High School," Journal of Reading, Volume 12, Number 8, (May, 1969), p. 631-2.

test scores as statistics and predictors, but observation of student response became as important as test scores. From the student's point of view the program has been successful."³⁸

Sidney J. Rauch defines the purpose of evaluation as, "To take a comprehensive, unbiased and cooperative look at the reading program and to decide what modifications or changes, if any, should be made to improve the program."³⁹

Despite criticisms directed at standardized tests, test scores still remain an important part of reading evaluation. Rauch discusses the merits of standardized tests as follows:

"Like other tools of teaching, standardized tests can be appraised in terms of both their form and their results. In their form--that is, their structure and operation--these tests have very important advantages: 1. their content is usually determined by careful design; 2. there are often parallel forms for comparison; 3. they permit many children to be treated simultaneously; and 4. they are objective in administering and scoring. In many schools, standardized test(s) are the first step in identifying those students who are below grade level and who are in need of further diagnosis. They are particularly useful in measuring the wide range of reading levels in a class, school or school system. They also provide standards for comparing students on a nationwide basis. Standardized tests make a valuable contribution to modern education by demonstrating rather clearly that children differ. They provide standards for making improvements in school programs in the areas of curriculum, school and classroom organization, and methods and materials of instruction."⁴⁰

³⁸Helen Reidelberger, "Serendipity--A Reading Program," Journal of Reading, Volume 15, Number 8, (May, 1972), p. 589.

³⁹Sidney J. Rauch, "How To Evaluate A Reading Program," The Reading Teacher, Volume 24, Number 3, (December, 1970), p. 244.

⁴⁰Ibid. p. 245-6.

In addition to the evaluation of the results of standardized reading tests, the results of individual and group intelligence tests must be taken into consideration. According to Rauch, reading is primarily a mental process, and reading test results must be evaluated in terms of intellectual potential or capacity.⁴¹

Despite the importance of standardized test results, the heart of the evaluation is classroom performance. Recommendations must be realistic. They must consider not only what should be done, but what can be done within a specific school-community environment.

In conclusion Rauch states that, "In most instances, evaluation has a positive effect on the reading program. It compels administrators and teachers to take a closer look at their methods, their materials, and their children--and this close examination generally results in progress."⁴²

⁴¹Ibid.

⁴²Ibid. p. 250.

CHAPTER III

TECHNIQUES OF THE STUDY

The major sections of this chapter are presented in the following order; research design, assessment instruments and selection of students, and data analysis and statistical techniques.

RESEARCH DESIGN

When one carries on an experiment in an educational setting, often there is little control over the assignment of subjects to a control group and an experimental group. Random assignment requires that all members of a population have an equal probability of being included in the sample. Ary, Jacobs, and Razavich point out that, "neither full control over the scheduling of experimental conditions nor the ability to randomize can always be realized, for various reasons."⁴³ In a school situation, schedules cannot be disrupted or classes reorganized in order to accommodate the experimenter's study.

Ary continues discussing problems with a research design when he states:

"Since the quasi-experimental design does not provide full control, it is extremely important that the researcher know which of the variables in his design may be inadequately controlled. It is imperative that he be aware of the sources of both internal and external validity and that he consider these in his interpretation."⁴⁴

⁴³Donald Ary, Lucy Chester Jacobs, and Asgbar Razavich, "Introduction to Research In Education," New York: Holt, Rinehart and Winston, Inc., (1972), p. 254.

⁴⁴Ibid.

The research design to be employed for the cognitive evaluation in this study is a quasi-experimental design. A truly experimental design is not appropriate, due to the absence of randomization in the selection of the students. The total grade nine student population will experience no reading laboratory, ten weeks or more than ten weeks of instruction in the reading laboratory.

Experimental ₁	O ₁	X ₁	O ₂
Experimental ₂	O ₃	X ₂	O ₄
Control	O ₅		O ₆

The Experimental₁ group represents those students who receive ten weeks of instruction (Treatment X₁) in the reading laboratory. The Experimental₂ group represents those students who receive more than ten weeks of instruction (Treatment X₂) in the reading laboratory over a one year period. The control group will receive no reading laboratory experience.

The research design for the "affective" evaluation is a quasi-experimental design as follows:

Experimental ₁	O ₁	X ₁	O ₂
Experimental ₂		X ₂	O ₃
Control			O ₄

The Experimental₁ group represents those grade nine students who receive ten weeks of instruction (Treatment X₁) in the reading laboratory. The Experimental₂ group represents those students who receive more than ten weeks of instruction

(Treatment X_2) in the reading laboratory over a one year period. The control group will receive no reading laboratory experience.

In the non-randomized control-group pretest-posttest design, subjects are assigned to the experimental and control groups based upon length of time of instruction in a reading laboratory, and are given a pretest on the dependent variable reading comprehension. The treatment, reading laboratory instruction, is introduced only to the experimental subjects for a specified time, after which the groups are measured on the dependent variable. The average gain between the pretest and posttest is found for each group and then these average gains are compared in order to ascertain whether the experimental treatment produced a greater change than the control situation. The significance of the difference in average change will be determined by an appropriate statistical test.

This research design controls most of the extraneous variables that pose a threat to internal validity. For example, the effects of history, maturation, and pretesting are experienced in both groups; therefore, any difference between the groups on the dependent measure could probably not be attributed to these factors.⁴⁵

Moreover, statistical regression is a major internal-validity problem for this design. "This refers to the tendency

⁴⁵Ibid. p. 245.

for extreme scores to regress or move toward the common mean on subsequent measurements."⁴⁶ Such a regression effect could be introduced into this design if the groups used in the study were drawn from populations having different means. Even when the groups are equivalent on a pretest, the regression effect that occurs could result in a shift or change from pretest to posttest that is incorrectly interpreted as an experimental effect.

Furthermore, Ary states that, "When intact classes are used, subjects are less aware of an experiment being conducted than when subjects are drawn from classes and put into experimental sessions. This contributes to the generalizability of the findings."⁴⁷

ASSESSMENT INSTRUMENTS AND SELECTION OF STUDENTS

The subjects used in this study are the grade nine students in the Dearborn Public Schools in the 1975-76 school year. Each of the students was pretested in the Spring of 1975 with the reading test found in the Test of Academic Progress, Form S. Furthermore the Otis-Lennon Mental Ability Test, Intermediate Level, Form J, was administered as part of the system-wide required testing program also in the Spring of 1975.

To assess the growth of reading comprehension over a one year period the reading test of the Test of Academic Progress was administered again to all grade nine students as a posttest

⁴⁶Ibid. p. 256.

⁴⁷Ibid.

in the Spring of 1976. Standard scores, as suggested by the authors of Tests of Academic Progress, are the scores used throughout this study for data analysis.⁴⁸ The standard scores for the Tests of Academic Progress result in a continuous scale so that scores made on different grade level tests can be compared meaningfully. Beginning-of-year grade nine norms were used in this study for both the pretest (Spring, 1975) and posttest (Spring, 1976). This standardized reading comprehension test with sixty-one items can be administered in forty-five minutes, and is published by the Houghton Mifflin Company with a copyright date of 1971. The reading test is designed to measure student competency in work-type reading situations, with reading selections which vary widely in length, topics discussed, style of writing, and level of reading difficulty. The four categories of reading competency of identification, comprehension, application, and evaluation are measured by this test according to its authors.⁴⁹

The authors of the Test of Academic Progress, Form S, Reading Test report a concurrent validity of .78, .72, and .61 respectively with the verbal, quantitative and nonverbal scores of the Cognitive Ability Test for beginning-of-year grade nine students.⁵⁰ They further report that the Tests of Academic Progress Reading Test has a split test reliability coefficient

⁴⁸Manual For Administrators, Supervisors, and Counselors, "Tests of Academic Progress, Form S." Boston: Houghton Mifflin Company, (1975), p. 20.

⁴⁹Ibid., p. 12.

⁵⁰Ibid., p. 13.

of .92 and a standard error of measurement of 3.21 for some 1,634 grade nine students. Both statistics are reported in standard score units.⁵¹

According to the Tests of Academic Progress authors a given standard score represents the same position on the scale, regardless of the grade level of the student earning the score.⁵² Moreover, when one compares the Test of Academic Progress Reading Test beginning-of-the-year grade nine norms with the beginning-of-the-year grade ten norms an average expected gain, over the one year period, is four standard score points for standard scores at or below forty-seven. For a student achieving at or above a standard score of forty-eight an expected gain during the one year period is an increase of three standard score points.

To assess the effect that the reading laboratory has upon the students opinions or positive attitudes toward reading, the Student Views on Reading was administered to all grade nine students as a posttest. This instrument was also administered to selected students at the beginning of a reading laboratory class as a pretest for the purpose of assessing change in attitudes toward reading. This instrument was published in the Journal of Reading, Volume 18, Number 7, April, 1975, and was developed by Dr. Larry Kennedy and Dr. Ronald Halinski, both at Illinois State University.

⁵¹Ibid., p. 13.

⁵²Ibid.

The instrument has a reliability coefficient of .93 between the scores on the two halves for the total group. Kennedy and Halinski report that the instrument does have construct validity in that the anonymity of the students does not have any significant effect on the scores. Students having been identified by their teachers as having the most positive attitude scored significantly higher on the instrument. Females scored significantly higher on the instrument as was expected. Also, they report that students in the accelerated academic track scored significantly higher than did the students in the regular track, while the difference between regular track students and remedial track students was not very pronounced.⁵³

In a survey of the ten junior high school principals in February, 1976, this writer discovered that most grade nine students had been scheduled into the reading laboratory prior to the fourth ten week session of the school year. Consequently, only four schools had reading laboratory classes in which twelve or more grade nine students were enrolled. (Assignment of grade seven, grade eight and grade nine students together is common in the junior high reading laboratory). Four classes were chosen from three different schools for pretesting and post-testing of the Student Views on Reading.

Careful attention was given to the testing environment and to the manner in which the tests were administered. As

⁵³Kennedy, op. cit. p. 520-1.

previously mentioned, the reading pretest was administered as part of a required system-wide testing program. Specific instructions were given test administrators to administer the posttest in a similar testing environment as the required system-wide testing was administered. The scoring of the tests was carefully monitored by this writer to assure accurate scoring. Both the raw scores and the standard scores were rechecked by a second person as a validity check of scoring accuracy.

Two of the hypothesis involved assessing the effects of "voluntary" and "required" participation of students into the reading laboratory. After discussions with several principals and reading laboratory instructors about the identification of students who "volunteered" or were "required" to take the reading laboratory as a class, this writer determined that such identification was not feasible in many instances. Students who were "guided" into the reading laboratory along with those who "volunteered" entirely on their own were in some situations scheduled into the same class. Identification, after the scheduling process, of either type of student was impossible. Also, to complicate the identification of "volunteer" and "required" attendance of students even further was the fact that some students that were "required" to take the reading laboratory for ten weeks later "volunteered" to take

another ten weeks of reading laboratory. Still others "volunteered" to take a reading laboratory class and then were "guided" into taking another ten weeks of reading laboratory because of low reading achievement scores. The data analysis for these questions was therefore limited to those students known by this writer to be "voluntary" or "required" to attend the reading laboratory.

DATA ANALYSIS AND STATISTICAL TECHNIQUES

The statistical procedures utilized in the analysis of the data involve the analysis of covariance, the analysis of variance and the t-test for determining if the difference between two means is statistically significant.

An assumption of random assignments underlies most statistical tests. A statistically significant t-test or F ratio means simply that the observed difference between groups was larger than would normally be expected to result from random assignment.

The two-tailed t-test for non-independent or correlated means was utilized for testing the hypotheses. The measure used for the correlated t-test is the difference between the pre and post scores.

The general rationale of analysis of variance is that the total variance of all subjects in an experiment can be analyzed into two sources, variance between groups and variance within

groups. Ary points out that,

"The assumption underlying the analysis-of-variance procedure is that if the groups to be compared are truly random samples from the same population, then the between-group mean square should not differ from the with-in group mean by more than the amount we would expect from chance alone. As the difference between these mean squares increases, the F-ratio increases and the probability of the null hypothesis being correct decreases."⁵⁴

Furthermore, he states that,

"When the null hypotheses is rejected as a result of this analysis-of-variance procedure, we cannot say more than that the measures obtained from the groups involved differ and the differences are greater than one would expect to exist by chance alone."⁵⁵

The analysis of covariance statistically equates the independent variable groups with respect to one or more variables which are relevant to the dependent variable. To put it another way, analysis of covariance allows the researcher to study the performance of several groups which are unequal with regard to an important variable as though they were equal in this respect.

For purposes of statistical analysis the four possible responses for each of the seventy items in the Student Views On Reading were weighted 4-3-2-1 or 1-2-3-4 depending on the positive direction of the test items as determined by the authors, Kennedy and Halsinki. A weighting of four was given to the response indicating a positive opinion toward reading, and a weighting of one was given to the response indicating a negative opinion toward reading. This by no means indicates

⁵⁴Ibid. p. 144.

⁵⁵Ibid. p. 145.

the importance or lack of importance of the response, but merely lends itself to the statistical methods employed. A high score indicates positive opinions toward reading as measured by the Student Views on Reading.

To discern between the nature of questions on the Student Views On Reading for possible gender influences, the total test scores were statistically analyzed for boys and girls in grade nine.

The five percent level of confidence was used to determine significant differences in this study. Hence, the two samples are considered statistically different whenever the calculated F ratio or t value is at $p \leq .05$. Furthermore, if the statistical analysis indicates that the difference between the two samples might have appeared by chance more than five times out of 100, the null hypothesis is not rejected.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The writer stated twelve questions with subsequent hypotheses to be answered in this quasi-experimental study in Chapter I. Statistical test results will be reported for each null hypothesis using a five percent significance level as a criterion.

In the Spring of 1975 the Tests of Academic Progress Reading Test, Form S, was administered to 1,575 grade eight students. The results of this test were used as pretest data for this study. Furthermore, the Otis-Lennon Mental Ability Test, Intermediate Level, Form J, was also administered to the grade eight students in the Spring of 1975. The intelligence quotient is another of the seven variables collected on these students by the Spring of 1976. Other student factors related to this study include school, gender, reading comprehension posttest score, length of time in the reading laboratory, and the student's attitude or view toward reading. Only those students were used in which all seven variables were complete. In this study, because of students transferring into, out of, and between schools - which resulted in incomplete data - 1,217 grade nine students were employed.

The 1,217 grade nine students are representative of the 1975-76 Dearborn grade nine enrollment. The mean mental

ability scores of the entire grade nine enrollment was 106.3 with a standard deviation of 13.83 compared to the mean mental ability scores of the 1,217 grade nine students utilized in this study of 106.5 with a standard deviation of 13.41. Moreover, the mean reading comprehension pretest score of all grade nine students was 46.9 compared to the mean reading comprehension pretest score of 48.0 for the 1,217 students participating in the study. Therefore, the writer asserts that the 1,217 students reported in this study portray the grade nine students in the Dearborn Public Schools in the 1975-76 school year.

No randomized assignment of students into an experimental or control group was possible in this study. The experimental groups were those students who received instruction in the reading laboratories for ten weeks or more than ten weeks during the 1975-76 school year. The control group was those students who received no instruction in the reading laboratories.

The analysis of covariance was employed to statistically account for any initial differences between the experimental and control groups. The Wayne State University Computer Center was utilized for analysis of the data. The pretest reading comprehension scores (independent variable) and posttest reading comprehension scores (dependent variable) were used as variables after grouping students by experimental and control groups.

READING COMPREHENSION GAINS

The pretest and posttest reading comprehension scores reported in this study are standard scores. As previously discussed in Chapter III, the reading comprehension average expected gain, over a one year period, is 1) four standard score points for standard scores at or below forty-seven, and 2) three standard score points for scores at or above forty-eight.

The total mean reading comprehension pretest value, reported in Table 5 is 42.31 with a posttest mean of 46.06, resulting in a gain of 3.69 standard score points during the one year period. With 876 students classified as low-achieving (standard scores of 34 or less) or average-achieving (standard scores of 35 thru 47), and 341 students classified as high-achieving (standard scores of 48 or higher), the mean reading comprehension expected gain is calculated to be 3.72 standard score points. Therefore, there was a one year's growth in reading comprehension scores for grade nine students receiving reading laboratory instruction.

READING COMPREHENSION GAINS BY AMOUNT OF LABORATORY INSTRUCTION

To analyze the differences between the mean reading comprehension gains of those students who received ten weeks of reading laboratory instruction and those students who received none, the analysis of covariance was applied. The independent

variable or covariate used was the mean reading comprehension pretest score and the dependent variable used was the mean reading comprehension posttest score. The observed value of F was .69. Since the expected value of F at the five percent level of confidence is 3.85, it was concluded that no significant difference existed as shown in Table 1. Hence, the null hypothesis was accepted.

TABLE 1
ANALYSIS OF COVARIANCE
NO LABORATORY AND TEN WEEKS LABORATORY
MEAN READING COMPREHENSION ACHIEVEMENT

Source of Variation	df	Sum of Squares	Mean Squares	F	p
Between	1	1338.5	1338.5	.69	n.s.
Within	1123	119721.5	40.97		
Total	1124	121060			

To determine whether a significant difference in mean reading comprehension gains occurred between those grade nine students who did not receive reading laboratory instruction and those students who received more than ten weeks of reading laboratory instruction the analysis of covariance was employed.

Again, the mean reading comprehension pretest score was used as the covariate and the mean reading comprehension posttest score was the dependent variable. Because the observed value of F of 3.70 was less than the criterion F with a value of 3.85 at the five percent level of confidence, it was concluded that no significant difference existed as shown in Table 2.

TABLE 2
ANALYSIS OF COVARIANCE NO
LABORATORY AND MORE THAN TEN WEEKS
LABORATORY MEAN READING COMPREHENSION ACHIEVEMENT

Source of Variation	df	Sum of Squares	Mean Squares	F	p
Between	1	1326.9	1326.9	3.70	n.s.
Within	890	94215.1	41.38		
Total	891	95542			

Table 3 reports the unadjusted and adjusted mean reading comprehension posttest scores and the mean reading comprehension pretest scores for the students with no reading laboratory participation, for the students with ten weeks of reading laboratory participation, and for the students with more than

ten weeks of reading laboratory participation. Note that the no laboratory participation group's mean was adjusted downward, because of the group's initial superiority over the ten weeks and the more than ten weeks laboratory participation groups in mean pretest reading comprehension achievement. Also included in Table 3 are the adjusted mean gain scores.

Analysis of the data in Tables 1, 2 and 3 shows that students who participated in the reading laboratory did achieve a greater mean reading comprehension gain than the students who did not participate in the reading laboratory. However, no significant difference exists at the five percent level between the means of these groups.

TABLE 3
NO LABORATORY, TEN WEEKS LABORATORY,
AND MORE THAN TEN WEEKS LABORATORY READING
COMPREHENSION ACHIEVEMENT WITH ADJUSTED MEANS

Laboratory	N	Posttest		Pre-Test	Adjusted Mean Gain
		Adjusted	Unadjusted		
No Lab	800	46.20	46.95	43.21	+2.99
Ten Weeks Lab	325	45.84	44.54	40.74	+5.10
More Than Ten Weeks Lab	92	44.86	42.93	40.00	+4.86

To measure the difference in mean reading comprehension gains of the students who were exposed to ten weeks of reading laboratory instruction and to more than ten weeks of reading laboratory instruction a t-test was applied. Table 4 shows once again, the calculated value of t of 1.05 which is less than the expected value of t which is 1.96. Therefore, no significant differences existed between the groups when tested for reading comprehension.

TABLE 4
ANALYSIS OF THE DIFFERENCES BETWEEN
TEN WEEKS LABORATORY AND MORE THAN TEN
WEEKS LABORATORY MEAN READING COMPREHENSION GAINS

Laboratory	N	Mean Reading Comprehension Gains	Standard Deviation	t	p
Ten Weeks Lab	325	3.80	6.58	1.05	n.s.
More Than Ten Weeks Lab	92	2.93	7.10		

Table 5 reports the reading comprehension gains for those students who received no instruction in the reading laboratory, those students who received ten weeks of reading laboratory instruction, and those students who participated in the reading laboratory for more than ten weeks.

The 800 students with no reading laboratory experience had the highest mean reading comprehension pretest score of 43.21 and the highest posttest score of 46.95 (46.20 adjusted), compared to the two experimental groups. The greatest achievement, however, was obtained by those 325 students who received ten weeks of reading laboratory instruction, a +3.80 unadjusted point gain or a +5.10 adjusted point gain. The 92 students who participated in the reading laboratory for more than ten weeks had the second largest gain of +2.93 unadjusted points or +4.86 adjusted points.

The mean reading comprehension pretest score for the grade nine students with no reading experience was higher than those students who participated in the reading laboratory. A greater majority of students who required reading instruction, whether "voluntary" or "required" to participate in the reading laboratory, were low-achieving or average-achieving students. Also included in Table 5 are intelligence quotients for the students. Let us now examine reading comprehension growth by achievement levels.

TABLE 5
 MEAN READING COMPREHENSION
 GAINS, I.Q., READING LABORATORY
 PARTICIPATION AND LEVEL OF ACHIEVEMENT

Laboratory	Achievers	N	I.Q.	Pre-Test	Post-Test	Gain
No Lab	Low	140	93.7	29.61	36.54	+6.92
No Lab	Average	418	105.3	41.05	44.90	+3.85
No Lab	High	242	119.4	54.79	56.50	+1.71
Total No Lab		800	107.5	43.21	46.95	+3.74
Ten Weeks Lab	Low	72	91.3	28.26	36.54	+6.46
Ten Weeks Lab	Average	174	103.3	39.78	42.94	+3.16
Ten Weeks Lab	High	79	120.3	54.24	57.01	+2.77
Total Ten Weeks Lab		325	104.7	40.74	44.54	+3.80
More Than Ten Weeks Lab	Low	29	89.5	28.55	32.55	+4.00
More Than Ten Weeks Lab	Average	43	105.7	40.51	44.53	+4.02
More Than Ten Weeks Lab	High	20	116.9	55.50	54.55	- .95
Total More Than Ten Weeks Lab		92	103.0	40.00	42.93	+2.93
Total	Low	241	92.5	29.08	35.51	+6.43
Total	Average	635	104.8	40.67	44.34	+3.67
Total	High	341	119.5	54.71	56.50	+1.79
Grand Total		1217	106.5	42.31	46.06	+3.69

READING COMPREHENSION GAINS BY ACHIEVEMENT LEVEL

To measure the mean reading comprehension growth over a one year period for low-achieving students, as classified on the pretest, a two-tailed t-test was employed as shown in Table 6. The expected year's growth in reading comprehension achievement is +4.00 standard score points as established by the authors of the Tests of Academic Progress Reading Test. This was previously discussed in Chapter III. Calculation of the t ratio resulted in a value of 4.96. This is significant at the five percent level of confidence with a value of t established at 1.96. Therefore, a significant difference exists between means of the low-achieving students reading comprehension gain and the expected mean gain; and the null hypothesis of no significant difference is rejected.

It should be noted that because a mean difference is "significant," it is not necessarily a meaningful or important mean difference. Other factors, such as how great the mean difference is, must be used to judge the importance of any statistically significant event. Furthermore, the larger the sample, the greater confidence one can place in a relatively small difference between the means.

TABLE 6
ANALYSIS OF THE DIFFERENCES
BETWEEN LOW-ACHIEVING AND ALL ACHIEVEMENT
LEVELS MEAN READING COMPREHENSION GAINS

Achievement	N	Mean Reading Comprehension Gains	Standard Deviation	t	p
Low-Achievers	241	6.43	7.00	4.96	<.05
All Levels	1217	4.00	6.63		

To analyze the differences between the average achieving students mean reading comprehension gains and the expected gain of +4.00 standard score points, a two-tailed t-test was applied. The observed value of t was 1.08. The criterion value of t was 1.96 at the five percent level of confidence. It was determined that there was no significant difference as shown in Table 7 between the mean reading comprehension gains of the average-achieving students and the expected mean gain. The null hypothesis of no difference, therefore, is accepted.

The mean reading comprehension gains of the high-achieving grade nine students were also subject to the t-test for statistical analysis as given in Table 8. The expected mean reading comprehension gain of +3.00 standard score points is utilized

TABLE 7
ANALYSIS OF THE DIFFERENCES BETWEEN
AVERAGE-ACHIEVING AND ALL ACHIEVEMENT
LEVELS MEAN READING COMPREHENSION GAINS

Achievement	N	Mean Reading Comprehension Gains	Standard Deviation	t	p
Average- Achievers	635	3.67	6.08	1.08	n.s.
All Levels	1217	4.00	6.63		

for standard scores of forty-eight and higher as set by the test authors. A value of t of 2.92 is larger than the criterion t value of 1.96 at the five percent level of confidence. Hence, there does exist a significant difference in mean reading comprehension gains. Even though the null hypothesis is rejected, it is not in favor of the high-achieving students.

TABLE 8
ANALYSIS OF THE DIFFERENCES BETWEEN
HIGH-ACHIEVING AND ALL ACHIEVEMENT
LEVELS MEAN READING COMPREHENSION GAINS

Achievement	N	Mean Reading Comprehension Gains	Standard Deviation	t	p
High-Achievers	341	1.80	6.71	2.92	<.05
All Levels	1217	3.00	6.63		

The 241 low-achieving students achieved the greatest mean reading comprehension gain of +6.43 points. It is interesting to note, however, that those 140 low-achieving students with no reading laboratory instruction, with a mean gain of +6.92 points gained more than either the 72 low-achieving students who received ten weeks of reading laboratory instruction with a gain of +6.46 points or the 29 low-achieving students who participated in the reading laboratory more than ten weeks with a gain of +4.00 points. The reading comprehension gains of the low-achieving students showed remarkable improvement, whether they received reading laboratory instruction or not.

The 635 average-achieving students did achieve about a one year's growth in reading comprehension with a gain of +3.67 points compared to the expected gain of +3.72 points. The +4.02 points gain for average-achieving students was the greatest for those 43 who experienced more than ten weeks of instruction in the reading laboratory. Furthermore, those 418 average-achieving students, who received no reading laboratory instruction achieved more than those 174 students who participated in the reading laboratory with gains of +3.85 and +3.16 points respectively. One might question why the achievement gain was less for those average-achievement students who did participate in the reading laboratory for a ten week session.

Overall, the 341 high-achieving students gained less than either the low-achieving or the average-achieving students.

The high-achieving students gained +1.79 points which is less than the expected growth of +3.00 standard score points over the one year period. The small reading comprehension achievement gain could partially be due to the regression effect. Is another contributing factor the type of instruction in the reading laboratory available to the high-achieving student? If the reading laboratory is organized as a remedial or developmental laboratory for low-achieving or average-achieving students it may not encourage nor motivate the high-achieving students. Lack of appropriate reading level of material and subject content of materials could also hinder progress. The "ceiling effect" of high pretest scores on a limited scale of a standardized instrument should not be ruled out as a factor. The reading comprehension pretest standard score of 54.71 is equal to an 85 percentile score. Therefore, these 341 high-achieving students have very little room for growth as they scored in the upper 15 percentile on the pretest. The reading comprehension posttest standard score of 56.50 is equated roughly to an 84 percentile score for the end-of-grade nine school year. Consequently, a gain of +1.79 standard score points over a one year period for high-achieving students with a pretest score of 54.71 resulted in a one percentile point loss during the 1975-76 school year.

Once again the amount of reading laboratory instruction does seem to have an effect on the reading comprehension

achievement of students. However, the greatest gain for high-achieving students is for those 79 students who received ten weeks of reading laboratory instruction with a +2.77 point gain, followed by those 242 students who had no reading laboratory experience with a gain of +1.71 points. The 20 high-achieving students with more than ten weeks of reading laboratory achieved a negative gain of 0.95 points. This negative gain indicates to the writer that high-achieving students should not be scheduled into the reading laboratory for more than ten weeks at the most. An additional variable that needs to be studied is whether the students participation in the reading laboratory is "voluntary" or "required."

READING COMPREHENSION GAINS BY VOLUNTARY OR REQUIRED LABORATORY ATTENDANCE

The classification of "voluntary" attendance versus "required" attendance of students was complicated, and therefore restricted, by the writer's discovery that some students "volunteered" for more reading laboratory instruction after they were previously "required" to take the reading laboratory as discussed in Chapter III. Therefore, the classification of student participation in the reading laboratory as "voluntary" or as "required" was made on a school basis. Students in two schools were classified as being "required" to attend the reading laboratory. Students in four schools were classified as having "volunteered" to attend the reading laboratory; and students

in the remaining four schools, where a combination of both types of attendance was employed, were classified as "voluntary and/or required."

To determine whether a significant difference in reading comprehension growth occurred between the "voluntary" and the "required" reading laboratory attendance groups, the mean gains were subject to a t-test. Calculation of the t ratio resulted in a value of .42. Since the expected value of the two-tailed t-test at the five percent level of confidence is 1.96, it is concluded that no significant difference exists between the mean reading gains of the "voluntary" and "required" reading laboratory groups as shown in Table 9.

TABLE 9
ANALYSIS OF THE DIFFERENCES BETWEEN
VOLUNTARY AND REQUIRED READING LABORATORY
ATTENDANCE MEAN READING COMPREHENSION GAINS

Laboratory	N	Mean Gain	Standard Deviation	t	p
Voluntary	170	3.49	6.77	.42	n.s.
Required	210	3.78	6.64		

The greatest reading comprehension gains, as reported in Table 10 are for those 456 grade nine students who did not attend the reading laboratory and were classified as "voluntary and/or required," with a gain of +4.19 standard score points. The mean gain of the same classification of 37 students who did participate in the reading laboratory was +3.14 points.

The second largest mean reading comprehension gain of +3.78 points is shown by those 210 students with "required" attendance in the reading laboratory. It should be noted that ten students who were classified as "required" to take the reading laboratory did not. A plausible explanation for this occurrence is that illness or the leaving and returning to the same school of the student during the 1975-76 school year may have taken place. Thus, the student could have missed the ten week session in which he or she was scheduled into the reading laboratory. It is interesting to note that the mean gain of these ten students was a loss of 1.60 points - perhaps reflecting the disruption of their attendance during the school year. Also reported in Table 10 are students intelligence quotients and views toward reading.

TABLE 10
 MEAN READING COMPREHENSION GAINS, I.Q.
 AND VIEWS TOWARD READING BY VOLUNTARY AND
 OR REQUIRED PARTICIPATION IN THE READING LABORATORY

Laboratory Attendance		N	I.Q.	Pre-Test	Post-Test	Gains	Views
No Lab	Voluntary	334	110.5	45.19	48.48	+3.29	187.6
No Lab	Required	10	86.1	31.00	29.40	-1.60	175.3
No Lab	Voluntary/ Required	456	105.8	42.02	46.20	+4.19	177.1
Total No Lab		800	107.5	43.21	46.95	+3.74	181.5
Lab	Voluntary	170	105.5	40.69	44.18	+3.49	175.7
Lab	Required	210	105.5	41.77	45.55	+3.78	181.2
Lab	Voluntary/ Required	37	92.7	33.32	36.46	+3.14	166.9
Total Lab		417	104.4	40.58	44.18	+3.60	177.7
Grand Total		1217	106.5	42.31	46.00	+3.69	180.2

READING COMPREHENSION GAINS BY GENDER

To measure the difference between the reading comprehension mean gains of the male group and the female group a t-test was applied. Utilization of the two-tailed t-test at the five percent level of confidence resulted in a value of 1.96 for the criterion t compared to a value of 1.87 for the observed t, with no significant difference between the mean reading comprehension gains of the male group and the female group as reported in Table 11.

The mean reading comprehension gains, while not statistically significant, did differ when grouped by gender. The grade nine males reported a gain of +3.34 standard score points compared to a gain of +4.05 points for the females.

The greatest mean reading comprehension gain was for the 401 females who did not participate in the reading laboratory,

TABLE 11
ANALYSIS OF THE DIFFERENCES BETWEEN MALE
AND FEMALE MEAN READING COMPREHENSION GAINS

Gender	N	Mean Gains	Standard Deviation	t	p
Male	616	3.34	7.22	1.87	n.s.
Female	601	4.05	5.95		

with a reported gain of +4.10 points, This compares favorably with the 200 females who received reading laboratory instruction, shown in Table 12, with a gain of +3.96 points.

Furthermore, the greatest mean reading comprehension gain reported for males was the +3.38 standard points for those 399 who did not attend the reading laboratory. The 217 males who participated in the reading laboratory achieved a mean gain of +3.28 points.

In the case of both sexes the pretest scores were lower for those students taking the reading laboratory than for those students who did receive reading laboratory instruction. It would appear that the difference in reading comprehension achievement, reported in Table 12, reveals that gender of the students has a great influence upon achievement gains. Table 12 also includes the students intelligence quotients.

STUDENT VIEWS TOWARD READING

The measurement of student attitudes or views toward reading adds an additional needed dimension of information regarding the reading laboratory.

Student views or opinions toward reading is measured by the Student Views On Reading seventy item instrument. The higher the score is, the more positive the student attitude is toward reading. Each item of the instrument was scored on a four point Likert type scale with four responses of strongly agree, agree, disagree, and strongly disagree. A copy of the instrument can be found in Appendix E.

TABLE 12
 MEAN READING COMPREHENSION
 GAINS, AND I.Q. BY GENDER AND
 READING LABORATORY PARTICIPATION

Laboratory	Gender	N	I.Q.	Pre-Test	Post-Test	Gains
No Lab	Females	401	107.6	43.11	47.21	+4.10
No Lab	Males	399	107.5	43.30	46.68	+3.38
Total No Lab		800	107.5	43.21	46.95	+3.74
Lab	Females	200	104.8	41.00	44.95	+3.96
Lab	Males	217	104.0	40.20	43.48	+3.28
Total Lab		417	104.4	40.58	44.18	+3.60
Total	Females	601	106.7	42.41	46.46	+4.05
Total	Males	616	106.3	42.21	45.55	+3.34
Grand Total		1217	106.5	42.31	46.00	+3.69

Administered as a posttest this instrument was utilized to measure the student's views toward reading. Comparisons were made of the grade nine students versus the norm group, and also by gender and by laboratory participation.

To measure the difference between the views toward reading means of the 417 students who participated in the reading laboratory and the views toward reading means of the norm group a two-tailed t-test was applied. The calculated value of t was 2.31 compared to the criterion t value of 1.96 at the five percent level of confidence. Therefore, a significant difference existed between the two groups when tested for views toward reading as given in Table 13. The null hypothesis of no significant difference was rejected.

TABLE 13
ANALYSIS OF THE DIFFERENCES
BETWEEN LABORATORY STUDENTS AND
NORM GROUP MEAN VIEWS TOWARD READING

Group	N	Mean Reading Views	Standard Deviation	t	p
Lab Students	417	177.7	32.2	2.31	<.05
Norm Group	972	182.0	31.0		

STUDENT VIEWS TOWARD READING BY GENDER

To identify the difference between the corresponding means of the male and female views toward reading, a two-tailed t-test of significance was applied as given in Table 14. Posttest results for the instrument, Student Views on Reading, showed that the males achieved a mean score of 174.3 compared to 186.2 for the females. When the males' score is subtracted from the females' score a difference of 11.9 points resulted, with the females having a greater positive attitude toward reading.

Application of a t-test to measure the significant difference between male and female views toward reading revealed a value of 6.62. Because the expected value of t at the five percent level of confidence is 1.96, the null hypothesis of no significant difference between the means of the two groups was rejected when students were tested for views toward reading.

TABLE 14
ANALYSIS OF THE DIFFERENCES
BETWEEN ALL MALE STUDENT AND ALL
FEMALE STUDENT MEAN VIEWS TOWARD READING

Gender	N	Mean Reading Views	Standard Deviation	t	p
Males	616	174.3	30.44	6.62	<.05
Female	601	186.2	32.13		

To further analyze the significant difference between 1,217 male and female views toward reading, all of 417 students who participated in the reading laboratory were statistically tested also as shown in Table 15. Applying a t-test to measure the differences between the males and females resulted in a value of 3.81. Since the expected value of t at the five percent level of significance is 1.96, a significant difference existed between the means of the males and the females who had received reading laboratory instruction when tested for positive attitudes or views toward reading; and the null hypothesis of no significant difference was rejected in favor of the females.

TABLE 15
ANALYSIS OF THE
DIFFERENCE BETWEEN MALE AND FEMALE
EXPERIMENTAL GROUP MEAN VIEWS TOWARD READING

Gender	N	Mean Reading Views	Standard Deviation	t	p
Male	217	172.0	29.62	3.81	<.05
Females	200	183.9	33.66		

STUDENT VIEWS TOWARD READING BY VOLUNTARY AND
REQUIRED LABORATORY PARTICIPATION

To determine whether a significant difference in student views toward reading occurs between "voluntary" and "required" reading laboratory attendance groups a t-test was used. When a t-test was applied a value of 1.66 was obtained. Because the expected value of t at the five percent level of confidence is 1.96, it was concluded that no significant difference existed between the groups when tested for attitudes toward reading after receiving reading laboratory instruction as shown in Table 16.

TABLE 16
ANALYSIS OF THE DIFFERENCES
BETWEEN VOLUNTARY AND REQUIRED READING
LABORATORIES ATTENDANCE MEAN VIEWS TOWARD READING

Laboratory	N	Mean Reading Views	Standard Deviation	t	p
Voluntary	170	175.7	30.30	1.66	n.s.
Required	210	181.2	33.98		

The highest positive attitudes or views toward reading as previously shown in Table 10 are for those 334 students classified as "voluntary" and who did not receive reading laboratory instruction with a mean score of 187.6 as compared to a mean expected score of 182.0. The second highest positive views toward reading score is reported for those 210 students who were "required" to participate in the reading laboratory, with a mean score of 181.2.

The 800 students who did not attend the reading laboratory had more positive views toward reading, with a mean score of 181.5, than those 417 students who did receive reading laboratory instruction, with a mean score of 177.7. It is interesting to note that the least positive views toward reading were recorded for those students who attended the reading laboratory and were classified as "voluntary and/or required," with a mean score of 166.9.

CHANGES OF STUDENT VIEWS TOWARD READING

From selected reading laboratory classes in junior high schools 59 students were pretested at the beginning of a reading laboratory session with the Student Views On Reading instrument. Accordingly, those students were also administered the same instrument at the conclusion of the reading laboratory session to measure a change in student views toward reading. The three junior high schools chosen represented the "voluntary" attendance, "required" attendance and the "voluntary and/or required" attendance of students into the reading laboratory.

To determine whether a significant difference occurred in low-achieving, average-achieving, and high-achieving student views toward reading, a two-way analysis of variance was applied. The obtained value of F was 2.36, which was compared to the expected value of 3.15 at the five percent level of confidence. Therefore, no significant difference existed between the student views toward reading when grouped by achievement levels as given in Table 17.

TABLE 17
ANALYSIS OF
LOW-ACHIEVING, AVERAGE-ACHIEVING, AND
HIGH-ACHIEVING STUDENT MEAN VIEWS TOWARD READING

Source of Variation	df	Sum of Squares	Mean Square	F	p
Between Groups	2	964.50	482.25	2.36	n.s.
Within Groups	56	11425.90	204.03		
Total	58	12390.4			

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

PURPOSE OF THE STUDY

This study was undertaken to investigate the effects of the reading laboratory in Dearborn's ten junior high schools. What effects did the reading laboratory have upon grade nine students in the 1975-76 school year? Was there a one year growth in mean reading comprehension scores? Measurement of other student variables included length of laboratory instruction, gender, achievement levels, "voluntary" or "required" attendance in the reading laboratory, and views toward reading.

RESEARCH DESIGN AND STATISTICAL PROCEDURES

An evaluation plan, which utilized a quasi-experimental research design, was initiated to measure reading comprehension gains in the 1975-76 school year.

The data for this study were collected from grade nine students in the ten junior high schools. The Tests of Academic Progress Reading Test, Form S, was employed to measure reading comprehension gains, and was administered as a pretest and posttest in the Spring of 1975 and 1976 respectively. The results and comparisons of these two administrations of the reading test were submitted to the analysis of covariance and a two-tailed t-test with a five percent level of confidence.

For "affective" evaluation a Student Views on Reading instrument was administered to grade nine students in the Spring of 1976 as a posttest only. Furthermore, selected grade nine students were pretested at the beginning of a reading laboratory ten week session with the Student Views on Reading. Hence, a change in student opinions toward reading was assessed. The scores were then subjected to an analysis of variance and a two-tailed t-test with a five percent level of confidence.

The Otis-Lennon Mental Ability Test, Intermediate Level, Form J, was also administered in the Spring of 1975 to determine any initial differences of the groups.

The Wayne State University Computer Center was employed for the statistical analysis of the data.

RESULTS OF TESTING THE NULL HYPOTHESES

Using standard scores of the Test of Academic Progress Reading Test a gain of +3.69 points was observed for all the grade nine students compared to an expected gain of +3.72 points. Therefore, it was concluded that there was a one year's growth in reading comprehension scores for grade nine students during the 1975-76 school year. The one year's growth included 417 grade nine students who received reading laboratory instruction and 800 grade nine students who did not participate in the reading laboratory.

To compensate for initial differences between the experimental and control groups with respect to the reading comprehension pretest scores, the analysis of covariance was applied. Analysis of the control group, no reading laboratory instruction, with the first experimental group, ten weeks of reading laboratory instruction, revealed no significant difference at the five percent level of confidence. Furthermore, analysis of the control group, no reading laboratory instruction, with the second experimental group, more than ten weeks of reading laboratory instruction, also revealed no significant difference at the five percent level of confidence. Therefore, the following null hypotheses comparing length of time in the reading laboratory with the control group were not rejected:

There is no significant difference in mean reading comprehension gains between those grade nine students with no reading laboratory experience and those grade nine students with ten weeks of instruction in the reading laboratory.

There is no significant difference in mean reading comprehension gains between those grade nine students with no reading laboratory experience and those grade nine students with more than ten weeks of instruction in the reading laboratory.

Since the third hypothesis involved only those students in the experimental groups the analysis of covariance was not required. Accordingly, a two-tailed t-test with a five percent level of confidence was determined for the students grouped with ten weeks of reading laboratory instruction, and more than ten weeks of reading laboratory instruction. Analysis of the groups, revealed no significant difference at the five percent

level of confidence. Therefore, the null hypothesis combining different lengths of time in the reading laboratory was not rejected:

There is no significant difference in mean reading comprehension gains between those grade nine students with ten weeks of reading laboratory instruction and those grade nine students with more than ten weeks of instruction in the reading laboratory.

When the students were grouped by level of achievement on the pretest a significant difference was found to exist in two of the three achievement groups. A significant difference occurred in the mean reading comprehension gains for both the low-achieving and high-achieving students. When the low-achieving students were tested by the Tests of Academic Progress Reading Test a mean gain of +6.43 points was significant at the five percent level of confidence in favor of the low-achieving students. In contrast, a lack of growth existed, with a mean gain of +1.80 points, for high-achieving students. A difference not in favor of the high-achieving students was significant at the five percent level of confidence. Hence, the following null hypotheses were rejected:

There is no significant difference in mean reading comprehension gains of low-achieving grade nine students and the expected one year's growth over a one year time period.

There is no significant difference in mean reading comprehension gains of high-achieving grade nine students and the expected one year's growth over a one year time period.

When the average-achieving grade nine students were tested for reading comprehension no significant difference in growth was found. Hence, the following null hypothesis was not rejected:

There is no significant difference in mean reading comprehension gains of average-achieving grade nine students and the expected one year's growth over a one year time period.

When the students were classified as having "voluntary" attendance or "required" attendance in the reading laboratory, no significant difference was found to exist in mean reading comprehension gains. Accordingly, the following null hypothesis was not rejected:

There is no significant difference in mean reading comprehension gains of those grade nine students who take the reading laboratory as an elective class and those grade nine students who were "required" to attend.

When tested for mean reading comprehension gains on the basis of gender no significant difference existed. Therefore, the following null hypothesis was not rejected:

There is no significant difference in mean reading comprehension gains between grade nine male and female students.

The assessment of student attitudes or views toward reading utilized the instrument "Student Views On Reading" and was administered as a posttest only. A group of 59 grade nine students were selected from three schools for a pretest administration of the Student Views On Reading instrument, to determine if a change in student views toward reading resulted

after having participated in a reading laboratory. A two-tailed t-test was applied to measure the significant difference of the pretest and the posttest views toward reading mean scores. A significant difference existed. Therefore, the following null hypothesis was rejected:

There is no significant difference in the grade nine students' views toward reading after having participated in a reading laboratory.

When student mean views toward reading scores are grouped by gender, a significant difference at the five percent level of confidence was found to exist in favor of the females. Accordingly, the following null hypothesis was rejected:

There is no significant difference between grade nine male students and grade nine female students views toward reading mean scores.

To measure whether a significant difference in "voluntary" or "required" attendance in a reading laboratory existed in student views toward reading mean scores, a two-tailed t-test was applied. The observed t value was determined to be not significant. Therefore, the following null hypothesis was not rejected:

There is no significant difference in mean views toward reading scores between those students who "voluntarily" attended the reading laboratory and those students who were "required" to attend.

Finally, to determine whether a significant difference occurred in low-achieving, average-achieving, and high-achieving student views toward reading, an analysis of variance was applied. The observed value of F was determined to be not significant.

Accordingly, the null hypothesis was not rejected:

There is no significant difference in mean views toward reading scores among the low-achieving, average-achieving, and high-achieving grade nine students who attended the reading laboratory.

CONCLUSIONS

As a result of the investigation and the statistical analysis of the data, four of the twelve null hypotheses were rejected.

In general, students who participated in the laboratory for ten weeks did not achieve a greater mean reading comprehension gain than the students who did not participate in the reading laboratory. However, ten weeks of reading laboratory instruction was beneficial for the low-achieving grade nine students. More than ten weeks of reading laboratory instruction did not improve the reading comprehension score of the low-achieving students. Furthermore, high-achieving students should not receive more than ten weeks of instruction in the reading laboratory.

The mean reading comprehension gain achieved by students is not affected by "voluntary" or "required" attendance in the reading laboratory. Consequently, either method of scheduling students into the reading laboratory would be appropriate.

Students who participated in the reading laboratory had a less positive attitude toward reading than those students who

did not participate in the reading laboratory. Furthermore, female students had a more positive attitude toward reading than male students.

IMPLICATIONS AND RECOMMENDATIONS FOR FUTURE STUDY

The problems of conducting studies in teaching reading are always compounded by the lack of control over teacher personality and behavior. According to Roger Farr, measuring reading comprehension is an extremely complex task. Factors included in reading comprehension test scores include the length, interest-appeal, subject matter, reading difficulty, and organization of the material to be read; the reader's purpose, mental set, environmental conditions for reading, and command of basic decoding skills; the types of questions to be used; and whether examinees are allowed to look back at the selection when answering questions. Furthermore, Farr indicates that the most efficient procedure for comparing students in general reading development is to use a group standardized reading test.⁵⁶

The evidence derived from this study has given support to the hypothesis that the reading laboratory does contribute

⁵⁶Roger Farr, "Reading: What Can Be Measured?," Newark, Delaware: International Reading Association, (1969), p. 53.

to the improved reading comprehension achievement of low-achieving grade nine students. Moreover, high-achieving students should not be scheduled into the reading laboratory for more than ten weeks.

The results of this study, though tentative, should contribute to the empirical evidence which educators must have to make rational instruction decisions. The evidence for using reading laboratories in junior high schools, which this study provides, should offer encouragement and stimulation for other researchers and reading educators to continue to explore these instructional techniques and organizational strategies. Additional research must be initiated to further examine the hypotheses employed in this study. A number of questions still to be researched include the following.

1. Is group size an important factor when utilizing a reading laboratory?
2. Does the use of different reading laboratory equipment and materials have differing effects upon student learning behavior?
3. How might a mixture of reading laboratory techniques and regular classroom procedures in differing lengths of time have upon student achievement?

4. What are the relationships between the organization of the reading laboratory and the cognitive styles of learners? Are there difficulty levels associated with remedial or developmental types of reading laboratories?

5. What are the students attitude toward techniques utilized in the reading laboratory? Are there particular features of some reading laboratory techniques that make them the best selection for different students?

APPENDIX A
Reading Laboratory Supplies

READING LABORATORY SUPPLIES

For the purposes of clarity the monies expended have been separated into three categories; equipment, furniture, and software.

EQUIPMENT:

8	EDL Controlled Readers
6	Taylor Skill Master Cassette Recorders
4	Psychotechnique Techomatic 500
1	Psychotechnics 150 T-Matic
8	EDL Aud-X Mark 4
2	EDL Controlled Reader, Senior
7	EDL Controlled Reader, Junior
16	Flash K Tachistoscope
61	Headsets
2	Singer Projection Senior Readers
11	Singer Reader Mate
6	Tachistoscopes
3	Singer Auto-vance II
5	Singer Reader Mate Model (Plastic)
7	Canbo-Pac 4 + 4 Listening Center
26	Tape Recorders (Cassette)
11	Tabletop Projection Screens
2	FILM Strip Projectors

FURNITURE:

- 14 Carrels, start unit
- 1 Projection Table and Cabinet
- 2 File Cabinets

SOFTWARE:

- 2 EDL Word Clues
- 3 Spelling progress laboratory tapes
- 1 Individualized Course, Grammar and Composition
- 1 New Modern Reading Skills Cassettes
- 2 SRA Reading Skills Cassettes
- 1 Reluctant Reader Library
- 400 Paperback Books
- 1 Language Skills Center
- 2 EDL Complete Software Lab
- 6 Purdue Visual Teaching Packages
- 1 Graflex (Singer) Projection Reading Program
Grades 4-10
- 2 Imperial Intermediate Reading Cassettes
- 3 Audio Reading Progress Lab (4-8)
- RAP REading AChievement Program D-4, E-4, F-4
- SRA Vocabulary Kit IT
- EDL Study Skills, Science, Social Studies
- EDL Listen & Read Cassettes
- Controlled Reader Filmstrips
- Word Clues, G - K
- Tech K Film Set
- Guided Reading Filmstrips and Cassettes
- Interaction Series - Listening Library
Cassettes (3 Sets)

APPENDIX B

Criteria For Evaluation of Reading Laboratory Materials

**CRITERIA FOR EVALUATION OF
READING LABORATORY MATERIALS**

Diagnosis of reading levels should contain:

- a. Provisions for preliminary diagnosis of skills, whether company-developed or suggestions for standard reading tests
- b. Provisions within materials for on-going diagnosis
- c. Incorporation of tests for various kinds of comprehension (e.g. specifics, generalizations, literal interpretations, inferences, etc.), vocabulary, and rate of comprehension
- d. Variety of pretests and comprehension checks in sensory approaches and in format
- e. Comprehension checks compatible with level of materials
- f. Provisions for cross references with other publishers' materials and with content areas

Functional Concerns:

- a. Durability of materials
- b. Suitability of format: sizes of books, variety of cover textures, use of color, print sizes and positioning on page
- c. Facility of classroom management: circulation ease; adaptability to large or small groups and/or individual use
- d. Recommendations for consumable or non-consumable materials

Educational Considerations:

- a. Identification of interest for age levels
- b. Identification of skill levels in conjunction with interest: for remediation--high interest, low skills; for development--high interest, average skills; for enrichment--high interest, high skills

Educational Considerations: (Continued)

- c. Use of multisensory (VAKT) approach particularly for remediation and for development
- d. Provision of several content areas at several levels to feed current interest with a concern for permanency
- e. Offering of several styles in addition to narration (expository, diagrams, charts, etc.) to encourage transfer of skills
- f. Clarification of copyright dates of materials, rather than renewal dates of publishers
- g. Provisions for the teaching of study skills and transfer to content areas
- h. Provisions for enrichment of skills already somewhat mastered to avoid loss of proficiency
- i. Identification of curriculum relevancy within the classroom (units, themes, etc.) and without the classroom in other disciplines and in everyday experiences

APPENDIX C
Evaluation Form: Software

EVALUATION FORM: SOFTWARE

Title of Material _____ Vendor _____ Package Cost _____
 Reviewer _____ Date _____ Components Available: Yes No
 Brief Description _____
 Levels Correspond To _____ Focus _____

KEY TO RATING: 1 = Poor; 2 = Fair; 3 = Good; 4 = Very Good; 5 = Excellent; NA = Not Applicable

MATERIALS FOR DIAGNOSIS

Preliminary Placement: 1 2 3 4 5 NA
 Description _____

Variety of Checks for:
 Kinds of Comprehension 1 2 3 4 5 NA
 Vocabulary 1 2 3 4 5 NA
 Rate of Comprehension 1 2 3 4 5 NA

Variety of Test Formats: 1 2 3 4 5 NA

Comprehension Checks
 Compatible with Materials: 1 2 3 4 5 NA

On-Going Diagnosis: 1 2 3 4 5 NA
 Description _____

Cross References with
 Other Publishers: 1 2 3 4 5 NA

Cross References with
 Content Areas: 1 2 3 4 5 NA

OVERALL EVALUATION: 1 2 3 4 5 NA

FUNCTIONAL CONCERNS

Durability:	1 2 3 4 5 NA	Classroom Management:	
Suitability of Format:	1 2 3 4 5 NA	Facility of Circulation	1 2 3 4 5 NA
Recommendation for:	Consumability	Large Group Use	1 2 3 4 5 NA
	Non-Consumability	Small Group Use	1 2 3 4 5 NA
		Individual Use	1 2 3 4 5 NA
		OVERALL EVALUATION:	1 2 3 4 5 NA

EDUCATIONAL CONSIDERATIONS

Age Level:	K-3	7-8	11-12	Variety of Styles for	
	4-6	9-10	Adult	Transfer of Skills:	1 2 3 4 5 NA
Interest with Skill Level:				Copyright Dates:	1 2 3 4 5 NA
High Interest, Low Skill			1 2 3 4 5 NA	Variety of Content Areas	
High Interest, Average Skill			1 2 3 4 5 NA	for Varied Interest:	1 2 3 4 5 NA
High Interest, High Skill			1 2 3 4 5 NA	Specific Areas Emphasized	_____
Multisensory Approach:					
Visual	Tactile	Auditory	Kinesthetic		
Teaching of Study Skills:			1 2 3 4 5 NA	Curriculum Relevancy	1 2 3 4 5 NA
Description			_____	Suggestions	_____
Variety of Vocabulary					
Development Techniques:			1 2 3 4 5 NA	OVERALL EVALUATION:	1 2 3 4 5 NA

GENERAL RECOMMENDATIONS

APPENDIX D

Correspondence With Author of Student Views on Reading

DEARBORN PUBLIC SCHOOLS

DIVISION OF INSTRUCTION

87

4824 LOIS, DEARBORN, MICHIGAN 48126

882-0441

Assessment and Research

JOSEPH JACKSON, PH.D., DIRECTOR

December 11, 1975

Mr. Ronald S. Halinski
Director of Measurement
Evaluation
Illinois State University
Normal, Illinois 61761

Dear Mr. Halinski:

Your article in the April, 1975 issue of the Journal of Reading entitled, "Measuring Attitudes An Extra Dimension" was of great interest. We are considering using such an attitude survey as part of the evaluation of the reading laboratories in our junior high schools. We would appreciate any information regarding copyright, name and address of publisher, scoring and statistical data which would be helpful in the interpretation of the results.

As we are planning a late January, 1976 survey administration, your prompt attention would benefit us greatly. We appreciate any help you can provide. Thank you for your consideration.

Gratefully,



Donald Mys,
Interim Consultant
Office of Research
and Evaluation

DM/wgh

Illinois State University

MEASUREMENT AND
EVALUATION SERVICE

December 15, 1975

Mr. Donald Mys
Interim Consultant
Office of Research and
Evaluation
Dearborn Public Schools
4824 Lois Avenue
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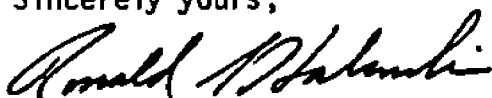
Dear Mr. Mys:

Enclosed are some additional materials which should be helpful in scoring Student Views on Reading. The instrument is not being commercially produced at this time and you should feel free to use it for your evaluation purposes. We would appreciate receiving, though, any results you might obtain.

The best data that we have is in the April, 1975 Journal of Reading article, and that data suggests to us that the instrument would be appropriate for a project evaluation involving comparison groups. Also, the reliability is sufficiently high for use on an individual student basis although this application should be approached cautiously until local normative data can be collected.

If you have further questions, I will provide whatever information is available.

Sincerely yours,



Ronald S. Halinski, Director
Measurement and Evaluation Service

RSH:kn
ENC: (3)

Normal-Bloomington, Illinois
Telephone: 309/438-2135

115 Julian Hall
Normal, Illinois 61761

APPENDIX E
Student Views on Reading

DIRECTIONS TO THE STUDENT

On the separate answer sheet:

1. Print your last name, first name and middle initial
2. Write your grade
3. Write READING VIEWS for name of test

DIRECTIONS FOR ADMINISTERING

There are no right or wrong answers so respond to each item as honestly as you can. Use a #2 pencil. If you change your mind and wish to erase a mark do so completely. Do not spend too much time on any one statement. You will have about 20 minutes in which to work.

DIRECTIONS: For each statement indicate how much you agree or disagree by marking your answer sheet.

- (A) if you strongly agree
- (B) if you agree
- (C) if you disagree
- (D) if you strongly disagree

For example:

(I) Books are very interesting

If you agree with the statement you should darken the space corresponding to that choice as follows.

I.	A	B	C	D
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1. I am a _____.
 - A. Boy
 - B. Girl

2. Did you take the reading laboratory class when you were in the eight grade?
 - A. No, I have had no reading laboratory class.
 - B. Yes, I have taken one ten-week reading laboratory class.
 - C. Yes, I have taken more than one ten-week reading laboratory class.

3. Did you take the reading laboratory class when you were in the seventh grade?
 - A. No, I have had no reading laboratory class.
 - B. Yes, I have taken one ten-week reading laboratory class.
 - C. Yes, I have taken more than one ten-week reading laboratory class.

4. Did you take the reading laboratory class as a ninth grade student?
 - A. No, I have had no reading laboratory class.
 - B. Yes, I have taken one ten-week reading laboratory class.
 - C. Yes, I have taken more than one ten-week reading laboratory class.

5. Are you currently enrolled in a reading laboratory class?
 - A. No.
 - B. Yes, this is my first reading laboratory class as a ninth grade student.
 - C. Yes, but I have taken one reading laboratory class before this class as a ninth grade student.

6. How would you rate your reading comprehension?
 - A. Better than average
 - B. Average
 - C. Lower than average
7. Reading is difficult for me.
8. I read only what I have to.
9. Reading helps me form opinions.
10. I would rather read than do anything else.
11. Authors seem to like words that are hard to understand.
12. I can forget my problems when I read.
13. It takes me a long time to read anything.
14. Reading broadens my imagination.
15. There are very few things that I find interesting to read.
16. Reading entertains me.
17. I dislike reading because most of the time I am being forced to read.
18. I don't believe there's anyone more interested in reading than I am.
19. I read too slow.
20. Reading has always been my favorite pastime.
21. Reading gives me self-confidence.
22. I find it difficult to just sit and read.
23. Reading helps me find a better way to communicate with people.
24. I have very little trouble understanding what I read.
25. Reading is very important to me.
26. I do not care to take the time to read.

27. I can learn much about my future from reading.
28. I am a good reader.
29. I always finish what I start to read.
30. Reading broadens my mind.
31. Reading is easy.
32. I like to read to learn about people.
33. Reading bores me.
34. I usually do not understand what is happening in a story.
35. Reading keeps me informed.
36. Reading is a fun way of learning.
37. Reading is too complicated.
38. Reading improves my vocabulary.
39. I have never found an assigned reading to be boring.
40. I read a lot.
41. Reading helps me understand problems that other people have.
42. Reading just does not appeal to me.
43. Books are an artistic expression of life.
44. When I read I can not keep my mind on the subject.
45. I can not sit still long enough to read.
46. Reading turns me off.
47. Reading helps me understand my personal problems.
48. Reading stimulates thought.
49. I have yet to read anything which I did not find interesting.
50. I can learn much about my future from reading.
51. Reading helps me to identify with people I want to be like.
52. Reading is difficult because of those big words.

53. I am seldom in a mood to read.
54. I like to read about other people's experiences in life.
55. I sometimes become a character in the book I am reading.
56. I get tired when I read.
57. When I read there are very few words I do not understand.
58. I like keeping up on new ideas.
59. Reading relaxes me.
60. Reading is a pleasant pastime.
61. I have to read material over and over to get something out of it.
62. I am a very fast reader.
63. By reading I meet people and places I have never met before.
64. I enjoy taking tests over what I read.
65. It's hard to get interested in reading things which are assigned.
66. I read for hours at a time.
67. Whenever I have some free time I always read.
68. I hate to read.
69. I seldom get any new ideas from reading.
70. I am an avid reader.
71. Reading is always an exciting experience.
72. Reading takes too much concentration.
73. No one ever had to force me to read anything.
74. Reading helps you think about things in a new way.
75. I like to read.
76. All books are interesting.

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EDUCATIONAL AND WORK EXPERIENCE:

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