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Kansas State College of Pittsburg

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AN EVALUATION OF A COLLEGE READING IMPROVEMENT COURSE
AT KANSAS STATE COLLEGE OF PITTSBURG
PITTSBURG, KANSAS

A Thesis Submitted to the Graduate Division in Partial
Fulfillment of the Requirements for the
Degree, Specialist in Education

by
Joyce Conley Hudiburg

KANSAS STATE COLLEGE OF PITTSBURG
Pittsburg, Kansas
August, 1966

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WITHDRAWN

Acknowledgement

I want to express my appreciation to Dr. Richard Watson, my major advisor, for his guidance during this study. I wish to express my gratitude to Dr. Ralph Wright and Mrs. Jean McColley, members of my committee, for their helpful suggestions. I wish to express my appreciation to Dr. Shelby Brightwell, without whom I could never have completed the study, for his assistance.

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CHAPTER I

THE NATURE, PURPOSE AND PROCEDURE OF THE STUDY

Introduction

Einstein has stated "Reading is the most complex task that man has ever devised for himself."¹ In order to function in our complex society, reading can no longer be considered the pronunciation of words, the understanding of words, or even the accomplishing of basic skills. With the tremendous variety of knowledge that is being discovered and accumulated today, there is need for a continual reading program from kindergarten through adulthood, each level of knowledge having its own vocabulary and organizational pattern.

Until recently, reading was considered a skill to be taught in the elementary grades, the assumption being that students could learn the essentials in elementary school and then advance on their own.

Reading improvement and study skills courses at the college level are not new but have become increasingly more

¹Jo M. Stanchfield, "The Reading Specialist in the Junior High School," Journal of Reading, VIII, No. 5 (April, 1965), 301.

numerous. Educators in recent years have developed a new philosophy concerning reading at higher educational levels. With the ever-increasing number of students attending colleges and universities in the United States, it has become apparent that many students who are failing academically are doing so because they are poor readers. The increase in federal funding to schools at the lower levels has placed more emphasis on reading in junior high school, high school, and college. College guidance and testing programs have made possible the evaluation of college students' reading abilities.

In the past college was considered a place for only the highly academic students. Today both parents and society regard a college education as a necessity for the majority of the students. If students with reading problems who enter colleges and universities are to succeed, these schools must provide the very best in reading improvement and study skills courses.

Many students reach college unprepared for the extensive amount of reading required of them. Educators, according to survey questionnaires, agree that some type of reading program should be offered to these students.² If sequential

² Phillip B. Shaw, "Integration of Reading Instruction with 'Regular' College Offerings," Phases of College and Other Adult Reading Programs, X, (1961), 113.

reading programs from elementary school through the university level are important, college reading improvement courses must be offered. The question, so often asked, is, "What type of course should be offered?"

The purpose of this study was to evaluate a six-weeks college reading improvement course at Kansas State College of Pittsburg, Pittsburg, Kansas.

Kansas State College of Pittsburg is located in a southeastern Kansas city of 20,000 population.³ K.S.C. is the only four-year college in this region. The campus covers more than 100 acres. There are thirty major buildings grouped around an attractively landscaped oval. The enrollment exceeded 5,100 students during the 1965-1966 academic year.

Kansas State College of Pittsburg is a liberal arts, co-educational, state college with emphasis on teacher education and vocational training. The college has offered a program of graduate study since 1929.

The college reading improvement program is under the direction of the education and psychology department. Programs for students in speed reading were offered as early as 1948. Some type of program on a voluntary basis has been offered sporadically since that time. There is no record of an evaluation on any of the college reading improvement courses.

³

Campus Key (Topeka: Kansas State Printing Plant, 1966).

Need for the Study

There is a need to evaluate the reading gains made through use of different methods in order to determine what type of course will best meet the needs of the students at Kansas State College of Pittsburg.

Many of the students involved in the college reading improvement courses are students who score below the fiftieth percentile on their entrance tests and who leave college before graduation. There is need to evaluate these students to determine whether they make more gains in vocabulary, speed of comprehension, level of comprehension, and total reading speed by using workbooks or by using machines.

Two methods of instruction (Workbook vs. Machines) were investigated in this study. Gains made in vocabulary, speed of comprehension, level of comprehension, and total reading for both methods of instruction were compared.

Null Hypotheses

The following null hypotheses were established for this study.

1A. There was no significant difference in pre and post test scores on vocabulary using a machine method.

1B. There was no significant difference in pre and post test scores on level of comprehension using a machine

method.

1C. There was no significant difference in pre and post test scores on speed of comprehension using a machine method.

1D. There was no significant difference in pre and post test scores on total reading using a machine method.

2A. There was no significant difference in pre and post test scores on vocabulary using a workbook method.

2B. There was no significant difference in pre and post test scores on level of comprehension using a workbook method.

2C. There was no significant difference in pre and post test scores in speed of comprehension using a workbook method.

2D. There was no significant difference in pre and post test scores on total reading using a workbook method.

3. There was no significant difference between machine and workbook method gain scores in vocabulary for those students who scored below the fiftieth percentile on the pre test in vocabulary.

4. There was no significant difference between machine and workbook method gain scores in level of comprehension for those students who scored below the fiftieth percentile on vocabulary on the pre test.

5. There was no significant difference between machine and workbook method gain scores in speed of comprehension for

those students who scored below the fiftieth percentile on vocabulary on the pre test.

6. There was no significant difference between machine and workbook method gain scores in vocabulary for those students who scored below the fiftieth percentile on level of comprehension on the pre test.

7. There was no significant difference between machine and workbook method gain scores on level of comprehension for those students who scored below the fiftieth percentile on level of comprehension on the pre test.

8. There was no significant difference between machine and workbook method gain scores on speed of comprehension for those students who scored below the fiftieth percentile on level of comprehension on the pre test.

9. There was no significant difference between machine and workbook method gain score on vocabulary for those students who scored below the fiftieth percentile on speed of comprehension on the pre test.

10. There was no significant difference between machine and workbook method gain scores on level of comprehension for those students that scored below the fiftieth percentile on speed of comprehension on the pre test.

11. There was no significant difference between machine and workbook method gain scores on speed of comprehension for those students that scored below the fiftieth percentile on speed of comprehension on the pre test.

Value of the Study

There is a great diversity of reading improvement programs in colleges and universities today. This diversity exists in goals, methods, materials, length of course, status of course, and in almost every other aspect of the program.⁴

Most of the colleges and universities evaluate their programs each year in order to study drop-outs, gains made in reading, methods and materials being used, and effects on college holding power (long run academic patterns of students).

The college reading improvement course at Kansas State College of Pittsburg had not had a formal evaluation in the past. An evaluation of this type should be beneficial in formulating future programs.

Assumptions

The following basic assumptions were made throughout the investigation.

1. The instruments and methods used to select students and to accumulate the data were valid.
2. The materials used for instruction were representative of all materials available in the teaching of reading at the college level.

4

Ralph C. Staiger, "Humanistic Aspects of College and Adult Reading," Perspectives in Reading, I, (1964), 2.

3. Equivalent forms of the pre and post tests were used. These were representative of tests used by colleges and universities for evaluation purposes.

4. The instructor teaching the college reading improvement course was capable of the assignment.

5. An evaluation of the college reading improvement course would be of value to the students and faculty.

Limitations

1. The study was confined to a group of eighty-two voluntary students in a six-weeks course that began February 9, 1966, and concluded March 24, 1966, at Kansas State College of Pittsburg, Pittsburg, Kansas.

2. The instructional materials were limited to two types: machine and workbook.

3. The analysis was subject to the statistical techniques available for effective use with this type of data.

4. The results of the analysis of the data were recognized as generalizable only to the College Reading Improvement Program at Kansas State College of Pittsburg, Pittsburg, Kansas.

5. The ability of the writer to choose and use the appropriate statistical techniques that were most effective for this type of research was important.

Definitions

SQ4R. This is a method designed to help students develop effective academic skills through use of specific techniques.⁵ A complete description is given in Appendix C.

Machine. Machine method of instruction used controlled readers with story filmstrips, Iowa Reading Films (College Series), and rateometers. A complete description is given in Appendix D.

Workbook. Workbook method of instruction used Be a Better Reader, How to Become a Better Reader and 30 Days to a More Powerful Vocabulary. A complete description is given in Appendix D.

Study Hints. Study Hints was the name of a series of lectures given to all students to improve their study skills. Many of the study hints were taken from Learning to Learn. The following subjects were included.

1. Orientation to the course.
2. SQ4R Study Methods.
3. Reading theory.
4. Techniques of reading (skimming, study reading, key word reading, topic sentences, paragraph structure, whole article structure, and style). Critical reading in the newspaper, book discussion, and personal reading.
5. Suiting technique to purpose in reading.
6. Reference sources (library and dictionary).
7. Vocabulary building (general and specific).

⁵ Donald E. P. Smith, Learning to Learn (New York: Harcourt, Brace, and World, Inc., 1961), p. 1.

8. Mechanics of eye movement (eye span perception and sub-vocalization).
9. Taking notes (lecture, textbook, and outlining).
10. Tips on taking objective and essay tests.
11. Overcoming poor physical habits (lip reading, head nodding, and finger pointing).
12. Concentration.

Description of Method Used for Drawing Conclusions

To secure acceptance or rejection of the null hypotheses involved in this study, it was necessary to determine an appropriate means of statistical analysis.

A t-test with (.01) level of significance was used to verify hypotheses 1A, 1B, 1C, 1D, 2A, 2B, 2C, and 2D listed on pages 5 and 6.

A chi square was used for hypotheses 3, 4, 5, 6, 7, 8, 9, 10, and 11 listed on pages 6 and 7.

Students were asked to fill out a student evaluation sheet pertaining to the course. These evaluation sheets were analyzed and the results were expressed in terms of response percentages. The evaluation sheet is shown in Appendix A.

Organization

Chapter I outlines the need for the study and questions to be answered.

Chapter II presents research that is related to this study.

Chapter III establishes the procedure used in this study.

Chapter IV presents and analyzes the data.

Chapter V contains a discussion of factors that might have influenced the results of this study, as well as a summary of the findings and conclusions.

CHAPTER II

A REVIEW OF RELATED LITERATURE

The idea of teaching reading to college students and adults came into American education about forty years ago. Prior to 1922, the literature did not report a successful study in which reading courses had been included in the college curriculum.⁶ From 1930 to 1963 there were 800 published studies which involved college students or adults in some phase of research.⁷ Very little was done in developmental reading at the college and adult levels prior to 1945. From 1945 to 1952 there were a large number of studies of remedial, corrective, and developmental courses at the college level.

Much of the rapid growth in research and interest in reading was a result of experimental research by educational psychologists who were interested both in reading and in measurement. Each year more students entered colleges and universities, and many of these needed to have reading courses in order to succeed in college. College dropouts

⁶ Wayne D. Lee, "Who Can Profit Most from Developmental Reading at College-Adult Levels?" Perspectives in Reading, I, (1964), 45.

⁷ Ann Jungeblut and Arthur Traxler, "Summary and Evaluation of Pertinent Research at the College and Adult Level, Perspectives in Reading, I, (1964), 115.

and low scores on entrance tests indicated a need for evaluation of reading needs of students.

Most of the research has attempted to explain methods and materials used to help students improve in reading.⁸ Different factors of reading have been measured by using a test at the beginning of the course and an equivalent form at the completion of the course. A number of studies have been made to investigate retention of gain in reading over a period of time.

The related research which is reviewed in this study involves a series of alternatives to the problems involved in any college reading improvement program. The related research is presented in the form of answers to the following questions.

Who Should Take a Reading Course?

Ideally all students should take the course because everyone could improve in reading efficiency.⁹ However since the cost in college would be prohibitive, the following methods of selecting students have been preferred.

1. Those students below a certain cutoff point on a

⁸ Ibid., p. 115.

⁹ George B. Schick and Bernard Schmidt, A Guidebook for the Teaching of Reading (Chicago: Psychotechnics Press, 1965), p. 49.

standardized reading test when they enter college might be selected.

2. Students come to a reading center and volunteer for such a program.

3. All freshmen are required to take the reading course.

4. Students are referred from placement officials, counselors or other staff members.

5. Students come to a reading clinic and take the course as an elective for credit.

What Tests Should Be Used to Evaluate the Program?

To assess any pupil's proficiency in any skill, it is first necessary to define the variable to be measured.¹⁰ A test of the variable, or as close an approximation of the variable as possible, must be administered. A student's pre and post test scores must be comparable.

In order to preserve test reliability, the availability of parallel equivalent forms and accuracy of measurement are very important. Some of the tests that have been used to measure college reading improvement courses are the Co-operative English Test forms A, B, and C2, the Reading

¹⁰ Frederick B. Davis, "The assessment of Change," Phases of College and Other Adult Reading Programs, (1961), 86.

Section of the American College Test, the Survey Section of Diagnostic Reading Test, and Iowa Silent Reading Test.¹¹ These tests mainly measure vocabulary, level of reading comprehension, speed of reading, and total reading.

In a survey in 1955, 233 colleges who had reading programs reported that tests used as pre and post tests were Diagnostic Reading Test 61, Cooperative English Reading Test 57, Iowa Silent Reading Test 45, S.R.A. Reading Test 22, Nelson-Denny Reading Test 21, California Reading Test 12, and Robins-Hall Reading Test 7.¹²

Several colleges have devised self evaluation tests.¹³ Most of these tests were highly subjective and required an appraisal of student attitudes and interests. Raygor and his colleagues at Minnesota devised the Diagnostic Reading Inventory from a pool of several hundred self evaluation statements. The test included such items as "I comprehend slowly when reading rapidly." "I read more than I used to."

Most colleges also evaluated during the reading program

¹¹ William Elller, "Evaluating Achievement in College and Adult Reading Programs," Perspectives in Reading, I (1964), 102.

¹² Lyle L. Miller, "Current Use of Workbooks and Mechanical Aids," Starting and Improving College Reading Programs, VIII (1959), 75.

¹³ Ibid., p. 103.

with informal tests. This evaluation consisted of comprehension and rate tests that accompanied materials used during the course.

William Eller of the University of Buffalo stated that formal tests such as the Iowa Tests were not conclusive enough to use exclusively.¹⁴ Eller maintained that college students should be evaluated individually as students in the primary grades are evaluated. College instructors who seek to determine the instructional level of their students must identify each student's general level of reading ability and must frequently appraise each student in regard to the following questions:

1. At what level can the student function when reading in the major content areas of science, social science and literature?
2. Is the student able to take useful notes from oral and printed material?
3. Can he organize information which he has assembled in various degrees of complexity of detail?
4. At what level is the student able to evaluate the materials which he encounters in his studies?

Eller suggested that instructors should construct informal tests using sample materials which include science,

14

William Eller, "Determining Reading Levels for Instruction," Reading and Inquiry, X, (1965), 187.

social science, and literary content taken from sources of known difficulty. Reading levels should be identified from junior high grades up. Informal tests should be made to check note-taking skills, evaluation skills, location and reference skills, and organization.

By What Department Should the Program be Administered?

Colleges differ as to the organization and responsibility for their reading programs.¹⁵ Some programs are established as separate special service departments; others are integrated into language arts areas, departments of education and psychology, or counseling bureaus.

In the fall of 1960 a questionnaire was sent to 505 colleges and universities concerning their reading programs.¹⁶ Two hundred forty-two reported they were currently offering some type of reading improvement course. To the question, "Under the auspices of which department or division is the program conducted?" The answers received were Education, 68; English, 60; counseling, 53; psychology, 53; and other auspices, 28.

Smith stated that the present trend in the organization

¹⁵

Henry Smith, "Innovations in College Programs," Reading and Inquiry, X (1965), 232.

¹⁶

Phillip B. Shaw, "Integration of Reading Instruction with 'Regular' College Offerings," Phases of College and Other Adult Reading Programs, X (1961), 113.

of a reading program favors a separate service area if the school can afford it.¹⁷

Should a Reading Course be for Credit?

There are many factors to consider concerning this question. Many college teachers feel that reading is something the student should have mastered before entering college.¹⁸ Proposals to grant credit often meet resistance from faculty groups. But because most college students have been conditioned to credit courses, students will attend more regularly if credit is given. Many students with reading problems need some type of reinforcement for promptness and regularity.

Shaw, in his article, expressed the opinion that, if reading instruction is a requisite part of every student's regular education, reading instruction should be offered for credit as a regular course.¹⁹ He suggested three ways in which college reading improvement courses could be organized as a required course: (a) as a regular course required of all students, (b) as a regular course given in conjunction with a group counseling or orientation program, (c) as a

¹⁷ Henry Smith, loc. cit.

¹⁸ William Eller, "Starting A College Reading Program," Starting and Improving College Reading Programs, VIII (1959), 21.

¹⁹ Phillip Shaw, op. cit., p. 119.

regular course with a reading instructor who would teach all freshmen reading below a predetermined level.

How much credit should be given? In deciding this, consideration must be given to the number of hours credit in other courses.²⁰ If other courses are being given three hours credit, it may be unwise to give as much credit for the same time spent for the reading course.

When credit is given, how should grading standards be established? Should standardized and informal tests be used as a means of grading? Grades could be based on the number of exercises completed or gains in reading rate, comprehension, or vocabulary.

Eller stated that a minimum credit would be helpful but that the reading course should not be treated as an academic course.²¹

What Type Course Should be Offered?

The methods of organization, materials, and techniques selected by the instructor will set the tone for the program. Miller, who made a survey of 233 college programs in 1957, found that by far the most popular method of instruction was

²⁰

William Eller, op. cit., p. 21.

²¹

Ibid., p. 22.

the group procedure.²² Ninety-six of the groups studied used workbooks and mechanical aids for whole groups. Forty-six institutions reported that they had a group program but used workbooks and mechanical aids individually.

Current methods in use at the college level fall in the following broad categories: Lecture, demonstration, discussion, programming, and pacing.

Lectures in college reading courses should be limited to part of the assigned period and be informal in nature. Lectures can not substitute for practice, but college students must first understand the principles of good study habits and understand and accept the rationale of drill.

Demonstration including audio-visual aids may be used for illustrating certain principles.²³ Often films on lip movements and poor study habits are used to illustrate how these may be corrected. Films are shown on how to outline, to study for tests, and to use SQ4R.

"Drill" is an inalienable method even at the college level.²⁴ Reading is a physical and neurological process and, as such, must be practiced to be learned. Drill must be preceded by understanding, and the students must accept

²²

Lyle L. Miller, "Evaluation of Workbooks for College Reading Programs," Techniques and Procedures in College and Adult Reading Programs, VI (1957), 75.

²³

Esther J. McConihe, "Methods of Teaching College Reading Skills," Reading and Inquiry, X (1965), 42.

²⁴

Ibid., p. 43.

it as necessary. The proper choice of material may make drill more enjoyable.

Discussions are important in a college reading program. Students need to discuss materials, techniques and problems. Discussion of the work will motivate students, as well as increase the depth of understanding.

In recent years the trend has been towards counseling or individually oriented reading, involving a detailed individual diagnosis and remediation.²⁵ One problem in this type of program is evaluation because it is very difficult to evaluate an individualized program.

Raygor described an individualized program typical of this type of program which was started in 1958 at the University of Minnesota.²⁶ The Reading and Study Skills Center at the University of Minnesota is administered by the office of the Dean of Students. Students hear about the center in many ways. Services are voluntary, non credit, without fee and flexible. Students may discontinue the service at any time.

The students are given tests, after which they have interviews with a center counselor. Together the student and

²⁵

Henry Smith, op. cit., p. 232.

²⁶

Alton Raygor, "Discovering Those Who Need Individual Help in Reading in College," Reading and Inquiry, X (1965), 168.

counselor decide on the skills needed by the student and on the program he should take. There are many materials available for the students. During the practice period, the counselors move about the room, checking students' progress. The key to such a program is a series of self-instructional materials.

Three methods of instruction (workbook approach, audio-visual approach, and individualized-self help approach) were compared by Spache, Standlee and Neville.²⁷ Results indicated that there was no significant difference between these three methods for vocabulary, reading rate and comprehension. Reading habits and attitudes were significantly more improved when the individualized self-help approach was used.

There are many materials for use in college reading programs.²⁸ In choosing materials, the general purpose of the reading program, types of students, and the length of the course must be determined.

In the past, courses in general have been either machine or workbook courses. In recent years, the trend has been towards making the program's goal one of individual growth and using all types of materials on an individualized

²⁷

Paul Conrad Berg, "Methods and Materials in College and Adult Reading Programs," Perspectives in Reading, I (1964), 29.

²⁸

Henry Smith, op. cit., p. 232.

basis. Emphasis is no longer on projectors, tachistoscopes and accelerators. These devices are not used as the central program. Mechanical devices, many of them greatly improved in recent years, are being used but not as the only materials.²⁹

There are several types of workbooks that may be used in college reading improvement courses.³⁰

All-purpose workbooks give consideration to nearly all the major reading skills. These workbooks discuss how to develop skills and give practice exercises for each skill.

The list below is representative of this type and is presented in ascending order of reading level.

1. Doris Gilbert, Breaking the Reading Barrier (Englewood Cliffs: Prentice Hall, 1959).
2. Lyle Miller, Increasing Reading Efficiency Revised Ed. (New York: Holt, Rinehart, and Winston, 1964).
3. Doris Gilbert, Power and Speed in Reading (Englewood Cliffs: Prentice Hall, 1956).
4. Walter Hill and William Eller, Power in Reading Skills (Belmont, California: Wadsworth Publishing Co., 1964).
5. Paul Leedy, Read with Speed and Precision (New York: McGraw-Hill, 1963).
6. Horace Judson, The Techniques of Reading Sec. Ed. (New York: Harcourt, Brace and World, 1963).

²⁹ Ibid., p. 232.

³⁰ Patricia Heard, "Selecting Materials for Multi-Level College Reading Programs," Reading and Inquiry, (1965), 189.

Practice reading workbooks do not contain information about how to increase reading skills, but do contain practice in these skills. They are composed of excerpts taken mainly from magazine articles and college textbooks.

The list below is representative and is again presented in ascending order according to difficulty.³¹

1. Elizabeth Simpson, SRA Practice Readers Books 2 and 3, Revised Edition (Chicago: Science Research Associates, 1962).

2. Lyle Miller, Maintaining Reading Efficiency (New York: Henry Holt and Co., 1959).

3. James Brown, Efficient Reading Skills (Boston: D. C. Heath, 1956).

4. Russell Casper and E. Glenn Griffin, Towards Better Reading Skills, Second Ed. (New York: Appleton-Century Crafts, 1959).

5. Phillip Shaw and Agatha Townsend, College Reading Manual (New York: Thomas Y. Crowell Co, 1959).

6. William G. Perry and Charles P. Whitlock, Selections for Improving Speed of Comprehension (Cambridge: Harvard University Press, 1948).

Workbooks for vocabulary fall into two categories.³²

One category examines root words, structural elements, origins of words, and dictionary skills. The other category contains exercises to develop fluency in the use of particular words.

³¹ Ibid., p. 190.

³² Ibid., p. 190.

The first two books are of the type which examines word origins, while the last three are of the type that develops fluency.

1. Charles B. Jennings, Nancy King, and Marjorie Stevens, Consider Your Words (New York: Harper and Bros., 1959).
2. Donald Lee, Harbrace Vocabulary Guide (New York: Harbrace, Brace, and World, 1956).
3. H. C. Hardwich, Words are Important Book 1 through 5 (Maplewood, N. J.: C. S. Hammond and Co.).
4. English Vocabulary Cards (Dayton: Visual Ed. Association).
5. A. A. DeVetes and J. R. Warner, Words in Content (New York: Appleton Century Crafts, 1961).

Books to develop critical thinking and to recognize faulty reasoning are often used as part of a college reading program.³³ These include ways of recognizing propaganda techniques and author's mood and tone. The following texts are of this type.

1. Richard Altick, Preface to Critical Reading, Fourth Edition (New York: Henry Holt and Co., 1960).
2. Walter Blair and John Gerber, Better Reading, Book I, Factual Prose, Fifth Edition (Chicago: Scott Foresman and Co., 1923).

Study skills manuals which include general study, learning, and test taking are another area of concern in some colleges.³⁴

³³ Ibid., p. 190.

³⁴ Ibid.

1. Clifford Morgan and James Deese, How to Study (New York: McGraw Hill, 1957).

2. Samuel Smith, Louis Shores, and Robert Brittain, An Outline of Best Methods of Study, Third Edition, College Outline Series (New York: Barnes and Noble, 1958).

Typical mechanical pacing aids to enforce rapid reading and prevent regressions are widely used.³⁵

1. Reading Accelerator, Model IV (Chicago: Science Research Associates), A reading pacer for individual use.

2. Controlled Reader. High School and College Series (Huntington: Educational Developmental Laboratories).

Kits and Laboratories are self-contained programs of multi-level materials.

1. S.R.A. Reading Laboratories, (Chicago: Science Research Associates).

In a survey of colleges conducted in 1955, 233 colleges responded that they had some type of reading program in operation. The nine books most widely used in the sample of this study are listed below in the order of descending frequency of use.³⁶

(17) Miller, Lyle L. Increasing Reading Efficiency (Henry Holt, 1956).

(14) Spache, George D. and Paul Berg, The Art of Efficient Reading (Macmillan Co., 1955).

(14) Glock, Marvin D., Improvement of College Reading. (Houghton Mifflin, 1954).

(13) Simpson, Elizabeth A., SRA Better Reading (Chicago: Science Research Associates, Inc., 1951).

³⁵

Ibid., p. 190.

³⁶

Lyle Miller, op. cit., p. 73.

(12) Brown, James I., Efficient Reading (D. C. Heath, 1952, Alternate Edition, 1956).

(11) Gilbert, Doris W., Power and Speed in Reading (Prentice Hall, 1956).

(9) Witty, Paul, How to Become A Better Reader (Science Research Associates, 1953).

(8) Cosper, Russell and E. G. Griffin, Toward Better Reading Skill (Appleton Century Crofts, 1953).

(8) Stroud, James B., Ammons and Bamman, Improving Reading Ability (Appleton Century Crofts, 1956).

What is the Importance of Motivation in a Reading Program?

Motivation was extremely important in college reading improvement courses. Jones suggested that, in his institution, some of the problems of motivation were eliminated by having voluntary enrollment.³⁷ After students had been enrolled on a voluntary basis, the next step was to give a battery of tests, show the students their scores, and plan their programs with them.

Motivation is increased by showing students that they can increase their proficiency as college students; student progress sheets are important as motivation because these charts show empirical evidence that, as the reading rate increases, comprehension does not decrease and often improves.

³⁷ Ernest Jones, "Selection and Motivation of Students," Starting and Improving College Reading Programs (Fort Worth: The Texas Christian University Press, 1959), 25.

What is the Drop-out Rate?

Most studies indicated a high drop-out rate in non-credit college reading improvement courses, although few studies actually gave the number or percentage of students that dropped courses. Most studies justified drop out rate by saying the programs should be voluntary in nature.

In a study outlined by King and Dellande, sponsored by the University of Missouri, the following was reported.³⁸ The course was offered twice and a total of fifty-four persons enrolled. Twenty-seven completed the course.

Keller reported on a five year program at Brooklyn College.³⁹ He stated that, in a free program, there is usually a certain percentage of drop-outs. In order to have ten finish a class, they would start with fifteen to eighteen.

What Types of Reading Programs Were Used by Other Schools?

The following are samples of different types of programs, representing courses offered for credit, for non-credit, with

³⁸

Paul King and William Dellande, "The University of Missouri Reading Improvement Program," Journal of Reading, VIII, No. 5 (1965), 309.

³⁹

Richard L. Keller, Manual of the Reading Improvement Program (Brooklyn: Brooklyn Public Library, 1960), 13.

large and small class loads, and with various methods and materials.

In a program at the University of Missouri, Paul Witty's How to Become a Better Reader was used and information on reading rate, comprehension, and efficiency of reading was recorded. For vocabulary training, Techniques of Reading by Horace Judson and Kenneth Baldrige was used.⁴⁰

The sessions were for twenty hours in class time with small classes. The Tachistoscope was used for perceptual training. Seven topics were covered in the reading techniques unit: phrase reading, sentence reading, paragraph reading, reading for main ideas, vocalization, skimming and inference.

The Cooperative English Test, Form C-2Z, was administered the first and last day. The t-test (one tailed) was used to assess the difference between correlated samples on the pre and post tests.

Because of lack of reading instructors and classroom space, Fort Lewis College, Durango, Colorado, experimented with large classes of sixty-five to one hundred and twenty-five students in college reading courses.⁴¹ The classes were offered twice weekly for fifteen weeks with one semester

⁴⁰ Paul King and William Dellande, op. cit., p. 307.

⁴¹ Jeanetter Martin, "Large Reading Classes in College," Journal of Reading, VIII, No. 6 (1965), 384.

hour credit allowed. All freshman students who scored below the fortieth percentile on the English division of the American College Test were required to register. Any other student in the college could enroll.

All students used film strips and a multi-level set of reading materials once a week on alternate days. At the beginning of the term all students were tested to determine their starting level in the multi-level reading material, and were placed in groups according to the tests.

The instructor explained SQ3R and principles of effective reading. Students used portable individual reading accelerators, multi-level materials, and films.

Timed tests were used to show gains. The timed tests given regularly showed an average gain of fifty-one per cent in effective reading rate.⁴² Instructors at Fort Lewis believe that small classes would yield more benefits, but the gains made and satisfaction expressed by students indicated that even in large classes reading improvement is beneficial.

The University of Texas gave a six-weeks course in reading improvement to law students in 1964.⁴³ The following areas and skills were included: surveying, intensive

⁴²

Ibid., p. 386.

⁴³

Patricia Heard, "An Effective Reading Class for Law Students," Journal of Reading, VIII, No. 5 (1965), 315.

reading, methods of increasing reading speed, skimming, flexibility, and vocabulary improvement.

Three workbooks were used: PDL., Harvard, and Millers, the exact titles and publishers of which were not given. The mechanical aids were reading films, tachistoscopic phrases, and individual pacers. "Surveying" and "Intensive Reading" skills were taught. Reprints of articles and case notes which appeared in the Texas Law Review were used. Discussion and class lectures on effective reading were used.

Pre and post tests from the three workbooks were used for evaluation along with student evaluation. In general the test results indicated the development of the skills stressed in the course. It was difficult to evaluate the course from pre and post test scores because so many aspects were not measured by the tests. All students indicated that the course should be offered again and that the course had helped, although some found it more beneficial than others. The one suggestion made most frequently was that a regular case book be used for freshman students as a "text" for the course. The regular case book suggested was entitled How to Read A Case.

Auburn University in Alabama has a three-hour elective Reading Improvement Course. The course enrolls between 800

to 900 students each year from an enrollment of 8,000 students.⁴⁴ Auburn has a campus-wide Faculty Council Committee on Reading Improvement that studies the reading needs of all students and makes recommendations for the program.

This program is a student-centered, corrective program. Intensive testing and interviewing in small groups is used during the first sessions. Students kept their own reading improvement records.

Auburn gave mimeographed pages called "Your Index to the Auburn Reading Laboratory" to each student. This listed all the materials and told the purpose of each set of materials to be used.

The following tests have been used with different sections for evaluation: Cooperative English Test, Diagnostic Reading Test, Survey Section, and the Iowa Silent Reading Test, advance.⁴⁵ In 1958 using the Iowa Test, it was shown that percentiles corresponding to the total median standard scores gained, on the average, from seventeen on pre test to fifty on mid term to sixty-seven on post test. The final evaluators in this student centered program are the students. One student exclaimed he'd read a full book for fun for the first time. One said "Big things come in little packages.

⁴⁴ Barbara Edwards, "In the Dawning of our Knowledge," Phases of College and Other Adult Reading Programs, (1961), 9.

⁴⁵ Ibid., p. 15.

This sentence seems to summarize reading improvement for me."

Summary

The review of the literature showed a great diversity among college reading improvement programs. The goals are as varied as the programs themselves. The methods and materials are many, but the materials were in two general categories: mechanical aids and workbooks. As for course length, the sessions varied from twelve class hours to full semester length courses. The credit status of the courses varied from campus to campus, but most courses investigated were non-credit. There were courses investigated, however, that gave from one to three hours of credit. Trends indicated that the non-credit, individualized, voluntary course was becoming the most popular type.

CHAPTER III

DESIGN OF THE STUDY

This chapter is concerned with the design of the study and information concerning the sample.

The experimental method was used for this study. The experimental method is a means of gaining new knowledge through the collection of freshly observed data under controlled conditions.⁴⁶

Documentary material in the study was obtained from a variety of sources of information relative to student performance.

Data Gathering Instruments and Collection of Data

The Cooperative Reading Comprehension Section of the Cooperative English Test, Form 1A and 1B, Cooperative Test Division, Educational Testing Service, Princeton, N. J., was used as a pre and post test.⁴⁷ This test measures achievement of college students in vocabulary, speed of comprehension, level of comprehension, and total reading.

⁴⁶

Arvil S. Barr, Robert A. Davis, and Palmer O. Johnson, Educational Research and Appraisal (Chicago: J. R. Lippincott, 1953), 225.

⁴⁷

Clarence Derrick, Davis Harris and Beron Walker, "Technical Report," Cooperative English Tests (1960).

The vocabulary test requires that a student look at a word and choose a synonym from four other words or phrases presented below it. The stimulus words become increasingly more difficult. The vocabulary raw score is simply the total number of right responses.

Reading passages for the reading comprehension sub-test are varied in style and content, representing the kinds of materials students are called upon to read in school. Each passage is followed by a group of questions which range from recall of facts to increasingly complex items requiring interpretation.

The level of comprehension score is based on the first thirty comprehensive items which is considered to be a power score.

The speed of Comprehension sub-test is based on the total number of comprehensive items the student answers correctly out of the sixty contained in part II. This score has been shown to be heavily dependent on how fast the student can read.

Vocabulary and Speed of Comprehension raw scores are added, divided by two, and converted on a table into a total reading score.

In addition to these tests, each completing student was given an evaluation sheet at the completion of the course. A copy of this form is contained in Appendix A.

Norms for the Cooperative Reading Comprehension section of the Cooperative English Test, Form 1A and 1B, Cooperative Test Division, were established by randomly selecting a group of freshman and sophomore college students representative of the United States with respect to region and type of college.

The regions selected were (a) North (a combination of Northeastern and Northwestern), (b) South, and (c) West. These consisted of (a) liberal arts colleges and universities and (b) teachers colleges, junior colleges, and technological colleges. Each college selected a class sample from an alphabetical list of the entire class.

The Population

The population is composed of all students who voluntarily enroll for the College Reading Improvement Program at Kansas State College of Pittsburg, Pittsburg, Kansas.

The Sample

The sample in this study was composed of eighty-two students given the College Reading Section of the Cooperative English Tests at the beginning of the program.

A t-test was computed on the pre and post test scores for these students to determine whether gains made on vocabulary, level of comprehension, speed of comprehension, and

total reading were significant.

From this sample three sub samples were drawn. Students who scored below the fiftieth percentile on the pre test on vocabulary composed one sub sample. Students who scored below the fiftieth percentile on the pre test on speed of comprehension formed another sample. Students who scored below the fiftieth percentile on the pre test of level of comprehension formed the third sub sample. Nine chi squares were computed using these sub samples to determine whether greater gains were made by students with specific weaknesses when machine method or when workbook method was used.

Organization of Instructional Periods

Six sections of the reading course were offered. Three sections were offered on Monday and Wednesday afternoons from 12:30 to 1:20, 1:30 to 2:20, and 2:30 to 3:20. Three sections were offered on Tuesday and Thursday afternoons from 12:30 to 1:20, 1:30 to 2:20 and 2:30 to 3:20.

Monday and Wednesday students used Machines, and Tuesday and Thursday students used Textbooks and Workbooks. The materials used in machine method and workbook method are described in Appendix D. All sections began with a ten to fifteen minute Study Hints Lecture concerning some phase of reading.

There were forty-six students enrolled for the machine

course. The classifications of these students were fifteen freshmen, six sophomores, fourteen juniors, six seniors, and five graduate students.

Table I indicated the percentile ranking on the pre test for machine method students.

TABLE I

DISTRIBUTION OF STUDENTS BY COLLEGE CLASSIFICATION
SHOWING PRE TEST PERCENTILE RANKING
FOR MACHINE STUDENTS ON READING
SECTION OF COOPERATIVE ENGLISH TEST FORM A

Percentile Range	0-25	26-50	51-75	76-100
Freshman	7	6	0	2
Sophomores	4	0	2	0
Junior	8	3	2	1
Senior	3	0	1	2
Graduate	1	0	3	1
Total	23	9	8	6

In the machine group were twenty-three students below the twenty-fifth percentile, thirty-two below the fiftieth, and fourteen students above the fiftieth percentile.

Table II indicates the post test percentile rank for students on the machine method.

TABLE II

DISTRIBUTION OF STUDENTS BY COLLEGE CLASSIFICATION
SHOWING POST TEST PERCENTILE STANDING
FOR MACHINE STUDENTS ON READING
SECTION OF COOPERATIVE ENGLISH TEST, FORM B

Percentile Range	0-25	26-50	51-75	76-100
Freshman	1	5	2	2
Sophomore	1	2	1	1
Junior	3	2	5	2
Senior	1	1	1	2
Graduate	0	0	1	3
Total	6	10	10	10

Ten of the machine students dropped the course within the first week. These were five freshman, one sophomore, two juniors, one senior and one graduate student.

Of the students that dropped, all but three stated that they were too busy with academic courses to continue the reading course. One changed his class schedule and was unable to continue because of a class conflict. One graduate foreign student stated that the course was too difficult.

Table III indicates the distribution of students by college classification showing percentile ranking for machine students who dropped the course.

TABLE III

DISTRIBUTION OF STUDENTS BY COLLEGE CLASSIFICATION
SHOWING PRE TEST PERCENTILE RANKING FOR
MACHINE STUDENTS WHO DROPPED THE COURSE

Percentile Range	0-25	26-50	51-75	76-100
Freshman	1	4	0	0
Sophomore	0	0	1	0
Junior	1	0	0	1
Senior	0	0	1	0
Graduate	1	0	0	0
Total	3	4	2	1

There were thirty-six students enrolled in the workbook course. The classification of these students was sixteen freshman, five sophomores, eight juniors, four seniors and three graduate students.

Table IV indicates percentile ranks for the pre test for workbook students.

TABLE IV

DISTRIBUTION OF STUDENTS BY COLLEGE CLASSIFICATION
SHOWING PRE TEST PERCENTILE RANKING
FOR WORKBOOK STUDENTS ON READING
SECTION OF THE COOPERATIVE ENGLISH TEST, FORM A

Percentile Range	0-25	26-50	51-75	76-100
Freshman	11	4	1	0
Sophomore	2	3	0	0
Junior	2	1	4	1
Senior	2	2	0	0
Graduate	3	0	0	0
Total	20	10	5	1

There were twenty students below the twenty-fifth percentile and thirty below the fiftieth. Six students were above the fiftieth percentile as indicated by Table IV.

Table V indicates the post percentile rank for these students.

TABLE V

DISTRIBUTION OF STUDENTS BY COLLEGE CLASSIFICATION
SHOWING POST TEST PERCENTILE RANKING FOR
WORKBOOK STUDENTS ON THE READING
SECTION OF THE COOPERATIVE ENGLISH TEST, FORM B

Percentile Range	0-25	26-50	51-75	76-100
Freshman	4	8	2	1
Sophomore	0	1	2	1
Junior	1	1	2	2
Senior	0	3	1	0
Graduate	1	0	0	0
Total	6	13	7	4

Table V shows there were six students below the twenty-fifth on post test percentile for workbook. Nineteen below the fiftieth percentile and eleven above the fiftieth.

Table VI shows the distribution of the students by college classification showing percentile ranking for workbook students who dropped the course.

TABLE VI

DISTRIBUTION OF STUDENTS BY COLLEGE CLASSIFICATION
SHOWING PRE TEST PERCENTILE STANDING FOR
WORKBOOK STUDENTS WHO DROPPED THE COURSE

Percentile Range	0-25	26-50	51-75	76-100
Freshman	1	1	0	0
Sophomore	0	1	0	0
Junior	1	0	0	0
Senior	0	0	0	0
Graduate	2	0	0	0
Total	4	2	0	0

Of the students that dropped the workbook course, three indicated they had similar courses in high school and felt they had not benefited from them. The other three were foreign students who hypothesized from the pre test as an indication that the work would be too difficult.

Analysis of the Data by Statistical Techniques

To secure acceptance or rejection of the null hypotheses involved in this study it was necessary to determine the means of statistical analysis.

A t-test with (.01) level of significance was used for the null hypotheses 1-A, 1-B, 1-C, and 1-D; 2-A, 2-B, 2-C, and 2-D listed in Chapter I, page 4 and 5.

A chi square test with a (.01) level of significance was used for the null hypotheses 3, 4, 5, 6, 7, 8, 9, 10, 11 listed in Chapter I, page 5, 6, and 7.

CHAPTER IV

ANALYSIS OF THE DATA

This chapter is devoted to the presentation and analysis of the data of the study. The data have been arranged in a series of tables from which comparisons and statistical analysis were made. A complete record of the scores is found in Appendix B.

Null hypotheses were used with a .01 level of significance established. The null hypothesis specifies the frequencies with which the different results of the experiment may occur.⁴⁸ The results of testing hypotheses are divided into two classes, one which shows a significant discrepancy or deviation from the hypothesis and the other which shows no significant discrepancy or deviation from the null hypothesis.

If these classes of results are chosen such that the first will occur when the null hypothesis is true with a known degree of rarity in, for example, 5 per cent or 1 per cent of the trials, then we have a test by which to judge, at a known level of significance, whether or not the data contradict the hypothesis to be tested.⁴⁹

⁴⁸ Allen L. Edwards, Statistical Methods for the Behavioral Science (New York: Holt, Rinehart, and Winston, 1964), 255.

⁴⁹ Ibid., p. 255.

The following "t" Test Formula for differences between means of groups was used for this investigation.⁵⁰

$$t = \sqrt{\frac{(\sum X)^2 (N-1)}{N \sum X^2 - (\sum X)^2}}$$

The single formula above, as compared to the older and more laborious methods, eliminated seven long division and the extraction of five square roots. The Table of "t" was used to check the significance.⁵¹

Table VII shows a comparison of the analysis of data on the vocabulary scores. Hypothesis 1-A. There was no significant difference in pre and post test scores on vocabulary using a machine method. This hypothesis was rejected. Hypothesis 2-A. There was no significant difference in pre and post test scores on vocabulary using a workbook method. This hypothesis was rejected.

⁵⁰

A. T. Slater and Hammel, "Calculator Formula for Evaluating the significance of Between Means," The Research Quarterly, XXXVI No. II (May, 1965), 212-215.

⁵¹

Allen Edward, op. cit., p. 501.

TABLE VII

COMPARISON OF THE ANALYSIS OF DATA
ON THE VOCABULARY SCORES

	Machine	Workbook
n	36	30
t ²	76.86	37.24
t	8.76*	6.19*

Significant difference*

As shown in Table VII the derived "t" score for vocabulary using the machine method was 8.76. The region of significance with thirty-five degrees of freedom is 2.60 at the .01 level of confidence. The hypothesis was therefore rejected. As shown in Table VII the derived "t" score for vocabulary using workbook method was 6.19. The region of significance with 29 degrees of freedom was 2.75 at the .01 level.

The rejection of hypotheses 1-A and 2-A indicates there was a significant gain not due to chance.

Table VIII shows analysis of data on the difference of scores for workbook and machine method on level of comprehension.

TABLE VIII

COMPARISON OF THE ANALYSIS OF DATA ON THE
LEVEL OF COMPREHENSION SCORES

	Machine	Workbook
n	36	30
t^2	.001	3.22
t	.03	1.79

Hypothesis 1-B. There was no significant difference in pre and post test scores on level of comprehension using a machine method. As shown in Table VIII the level of comprehension "t" score for the machine course was .03. The region of significance with 35 degrees of freedom was 2.60 at the .01 level. This hypothesis was accepted.

Hypothesis 2-B. There was no significant difference in pre and post test scores on level of comprehension using a workbook method. This hypothesis was accepted. The "t" score for level of comprehension using workbook course was 2.69. The region of significance with 29 degrees of freedom was 2.75. These indicated there was no significant gain in

level of comprehension for workbook or machine.

Table IX indicates a comparison of the analysis of data on the speed of comprehension scores.

TABLE IX

COMPARISON OF THE ANALYSIS OF DATA ON THE
SPEED OF COMPREHENSION SCORES

	Machine	Workbook
n	36	30
t^2	7.36	1.05
t	2.71*	1.02
Significant Difference*		

Hypothesis 1-C. There was no significant difference in pre and post scores on speed of comprehension using a machine method. This hypothesis was rejected, indicating there were significant gains on speed of comprehension for students using the machine method. As shown in Table IX, the derived "t" score for speed of comprehension on machine course was 2.71. The region of significance with 35 degrees of freedom was 2.60 at the .01 level.

Hypothesis 2-C. There was no significant difference in pre and post test in speed of comprehension using a workbook method. This hypothesis was accepted. As shown in Table IX, the derived "t" score for speed of comprehension using

workbook method was 1.02. The region of significance with 29 degrees of freedom was 2.75 at the .01 level. This indicated there was no significant gain in speed of comprehension for workbook method.

Table X shows analysis of data on difference of scores for workbook and machine for total reading.

TABLE X

COMPARISON OF THE ANALYSIS OF DATA ON THE
TOTAL READING SCORES

	Machine	Workbook
n	36	30
t ²	35.59	28.12
t	5.97*	5.30*
Significant Difference*		

Hypothesis 1-D. There was no significant difference in pre and post test scores on total reading using a machine method. As shown in Table X the derived "t" score for total reading of the machine course was 5.97. The region of significance with 35 degrees of freedom was 2.60 at the .01 level. This hypothesis was rejected.

Hypothesis 2-D. There was no significant difference in pre and post test scores on total reading using a workbook

method. As shown in Table X the derived "t" score for total reading using workbook method was 5.30. The region of significance using 29 degrees of freedom was 2.75 at the .01 level. This hypothesis was rejected.

The rejection of hypotheses 1-D and 2-D indicated students made significant gains using both the workbook and the machine methods.

Chi square is used when problems involve a number of subjects, objects, or measurements falling in various categories. There would be a certain observed number of subjects in each category as compared to a number of expected subjects by chance. Observed groups of students in each category of a chi square group table compared to the expected in that category represents a chi square cell.⁵²

The null hypothesis was tested in terms of the total chi square distribution, and a total chi square value in this study. The formula $\frac{(f_o - f_e)^2}{f_e}$ was used for obtaining the chi square values in this study. The level of significance of each total chi square value was obtained from chi square table.⁵³

In establishing each category the following procedure was used. The groups of students who scored below the fiftieth percentile on the pre-test on vocabulary were

⁵² Ibid., p. 366.

⁵³ Ibid., p. 500.

recorded. The scores were used for the first three groups. Students who scored below the fiftieth percentile on pre-test on level of comprehension comprised the next three groups. Students who scored below the fiftieth percentile on the pre-test for speed of comprehension were used for the next three groups. The fiftieth percentile was chosen as a cut-off because it was felt these students were the ones who were unable to function properly in college.

The pre-test scores placed the students in the particular category on each of the skills tested. Next the groups were divided into cells according to whether they had used workbooks or machines during the course. The next classification used for division into the cells was gains or no gains made during the course. Students who made no gain were placed in the first cell. Students who made some gain were placed in the second cell, and students who made great gain were placed in the third cell.

In determining which students made no gain, some gain, and great gain, the following procedure was used. If a student had a minus to zero difference in gain from pre to post testing, the classification was no gain. The students who gained from one through forty-nine per cent were considered to have made some gain. Students who gained fifty per cent or over from pre to post test scores were considered to have made great gain. In the tables the initials are used for no gain (N.G.), some gain (S.G.), and great gain (G.G.).

The degrees of freedom were determined by the formula $df = (N_r - 1)(N_e - 1)$.⁵⁴ In each of the nine chi squares, the degrees of freedom were two. The .01 level of significance was used to accept or reject the null hypothesis tested by chi square. A chi square table was used to check the significance.⁵⁵

Table XI shows the analysis of vocabulary gains for students who scored below the 50th percentile on vocabulary on pre test.

TABLE XI

ANALYSIS OF VOCABULARY GAINS FOR STUDENTS
WHO SCORED BELOW THE 50TH PERCENTILE ON VOCABULARY
ON PRE TEST

	N.G.	S.G.	G.G.	TOTAL
Machine				
Expected frequency	3.8	12.35	2.85	19
Observed frequency	2	13	4	
Workbook				
Expected frequency	4.2	13.65	3.15	21
Observed frequency	6	13	2	
Total	8	26	6	40

Chi square 2.57305

⁵⁴ A. T. Slater and Hammel, op. cit., pp. 212-215.

⁵⁵ Allen Edwards, op. cit., p. 500.

Hypothesis 3. There was no significant difference between machine and workbook gain scores in vocabulary for those students who scored below the fiftieth percentile on the pre test in vocabulary. The chi square was 2.57305. Observed and expected scores are shown in Table XI. The chi square to be significant at the .01 level must be 9.210 or greater. This hypothesis was accepted indicating there was no significant difference.

In some instances even though there was no significant gains represented by the total chi square value, the distribution of the scores within cells indicates that one method might still be better than another. In Table XI, for example, there were fewer students who made no gain and more who made great gain than had been expected in the group using the machine method. This relationship was reversed for the workbook group; more students made no gain than was expected on workbook and fewer students made great gain than expected. This might indicate that students who scored below the fiftieth percentile on pre-test vocabulary would profit more from a machine type course.

Table XII shows the analysis of data concerning level of comprehension gains for students who scored below the fiftieth percentile on vocabulary pre-test.

TABLE XII

ANALYSIS OF LEVEL OF COMPREHENSION GAINS
FOR STUDENTS WHO SCORED BELOW THE 50TH PERCENTILE
ON VOCABULARY ON PRE TEST

	N.G.	S.G.	G.G.	TOTAL
Machine				
Expected frequency	10.5	6.65	1.9	19
Observed frequency	12	5	2	
Workbook				
Expected frequency	6.30	7.35	2.1	21
Observed frequency	10	9	2	
Total	22	14	4	40

Chi square 1.22771

Hypothesis 4. There was no significant difference between machine and workbook gain scores in level of comprehension for those students who scored below the fiftieth percentile on vocabulary. This hypothesis was, therefore, accepted. The total chi square value was 1.22771, while the region of significance for this value with 2 degrees of freedom was 9.210.

Table XII indicated the greatest number of students were in the no gain for both the machine and the workbook

course. Apparently neither method helped students low in vocabulary make gains in level of comprehension.

Table XIII shows analysis of speed of comprehension gains for students who scored below the fiftieth percentile on vocabulary on pre test.

TABLE XIII

ANALYSIS OF SPEED OF COMPREHENSION GAINS
FOR STUDENTS WHO SCORED BELOW THE 50TH PERCENTILE
ON VOCABULARY ON PRE TEST

	N.G.	S.G.	G.G.	TOTAL
Machine				
Expected frequency	5.7	10.45	2.85	19
Observed frequency	8	9	2	
Workbook				
Expected frequency	6.3	11.55	3.15	21
Observed frequency	4	13	4	
Total	12	22	6	40

Chi square 2.53383

Hypothesis 5. There was no significant difference between machine and workbook gain scores in speed of comprehension for those students who scored below the fiftieth percentile on vocabulary. The total chi square value was 2.53383 which is not significant at the .01 level of significance. The region of significance with 2 degrees of

freedom was 9.210. This hypothesis was accepted.

Table XIII seems to indicate within the cells, however, that more students made some or great gains on the workbook method than were expected, and less than expected on some gain and great gain on machine. This suggests students who score below the fiftieth percentile on vocabulary on pre test who wish to improve on speed of comprehension might make more gain by using a workbook method.

Table XIV shows the analysis of vocabulary gains for students who scored below the fiftieth percentile on level of comprehension.

TABLE XIV

ANALYSIS OF VOCABULARY GAINS FOR STUDENTS WHO
SCORED BELOW THE 50TH PERCENTILE ON LEVEL OF
COMPREHENSION ON PRE TEST

	N.G.	S.G.	G.G.	TOTAL
Machine				
Expected frequency	4.36	21.64	3.18	24
Observed frequency	2	16	6	
Workbook				
Expected frequency	3.64	12.73	3.64	20
Observed frequency	6	12	2	
Total	8	28	8	44

Chi square 2.86306

Hypothesis 6. There was no significant difference between machine and workbook gain scores in vocabulary for those students who scored below the fiftieth percentile on level of comprehension. The total chi square value was 2.86306. The region of significance for chi square with 2 degrees of freedom is 9.21 at the .01 level of confidence. Therefore, this hypothesis was accepted.

As indicated in Table XIV, twenty-two students out of twenty-four made some gain with six making great gain on the machine. For the workbook group fourteen students out of twenty made some gain or great gain. It appears from the data that students who scored below the fiftieth percentile on level of comprehension might make more gain in vocabulary by using the machine method.

Table XV shows the analysis of level of comprehension gains for students who scored below the fiftieth percentile on level of comprehension on pre test.

Hypothesis 6. There was no significant difference between machine and workbook gain scores in vocabulary for those students who scored below the 50th percentile on level of comprehension. **TABLE XV**

between machine and workbook gain scores in vocabulary for those students who scored below the 50th percentile on level of comprehension.

ANALYSIS OF LEVEL OF COMPREHENSION GAINS FOR STUDENTS WHO SCORED BELOW THE 50TH PERCENTILE ON LEVEL OF COMPREHENSION ON PRE TEST

TABLE XV. Analysis of level of comprehension for chi square with 2 degrees of freedom.

	N.G.	S.G.	G.G.	TOTAL
Machine				
Expected frequency	12.55	8.73	2.73	24
Observed frequency	15	6	3	
Workbook				
Expected frequency	10.46	7.27	2.27	20
Observed frequency	8	10	2	
Total	23	16	5	44

Chi square 2.994498

Hypothesis 7. There was no significant difference between machine and workbook gain scores on level of comprehension for those students who scored below the fiftieth percentile on level of comprehension. The total chi square value was 2.994498 and the region of significance for chi square with 2 degrees of freedom was 9.21. The hypothesis was accepted. The observed and expected scores are shown in Table XV.

The data within cells indicates that students who scored below the fiftieth percentile on level of comprehension might make greater gains in level of comprehension

using workbook method rather than the machine method.

Table XVI shows the analysis at speed of comprehension gain for students who scored below the fiftieth percentile on level of comprehension on pre test.

TABLE XVI

ANALYSIS OF SPEED OF COMPREHENSION GAINS
FOR STUDENTS WHO SCORED BELOW THE 50TH PERCENTILE
ON LEVEL OF COMPREHENSION OF PRE TEST

	N.G.	S.G.	G.G.	TOTAL
Machine				
Expected frequency	6	12	5.45	24
Observed frequency	8	10	6	
Workbook				
Expected frequency	5.45	10	4.55	20
Observed frequency	4	12	4	
Total	12	22	10	44

Chi square 1.562071

Hypothesis 8. There was no significant difference between machine and workbook gain scores on speed of comprehension for those students who scored below the fiftieth percentile on level of comprehension. The chi square was 1.562071 and the region of significance for chi square with 2 degrees of freedom was 9.21. This hypothesis was accepted.

It appears from analysis of the data within cells that students who scored below the fiftieth percentile on level

of comprehension made more gain in speed of comprehension on the workbook method.

Table XVII indicates analysis of vocabulary gains for students who scored below the fiftieth percentile on speed of comprehension on pre test.

TABLE XVII

ANALYSIS OF VOCABULARY GAINS FOR STUDENTS
WHO SCORED BELOW THE 50TH PERCENTILE
SPEED OF COMPREHENSION ON PRE TEST

	N.G.	S.G.	G.G.	TOTAL
Machine				
Expected frequency	4.55	17.05	3.41	25
Observed frequency	2	19	4	
Workbook				
Expected frequency	3.45	12.95	2.59	19
Observed frequency	6	11	2	
Total	8	30	6	44

Chi square 4.06720

Hypothesis 9. There was no significant difference between machine and workbook gain score on vocabulary for those students who scored below the fiftieth percentile on speed of comprehension. The chi square was 4.06720 and the region of significance for chi square with 2 degrees of freedom was 9.21. The hypothesis was accepted.

The data within cells indicates that students who scored below the fiftieth percentile on speed of comprehension might make greater gains in vocabulary using the machine method.

Table XVIII indicates analysis of level of comprehension gains for students who scored below the fiftieth percentile on speed of comprehension on pre tests.

TABLE XVIII

ANALYSIS OF LEVEL OF COMPREHENSION GAINS
FOR STUDENTS WHO SCORED BELOW THE 50TH PERCENTILE
ON SPEED OF COMPREHENSION ON PRE TEST

	N.G.	S.G.	G.G.	TOTAL
Machine				
Expected frequency	13.64	8.52	2.84	25
Observed frequency	16	6	3	
Workbook				
Expected frequency	10.36	6.48	2.16	19
Observed frequency	8	9	2	
Total	24	15	5	44

Chi square 2.692151

Hypothesis 10. There was no significant difference between machine and workbook gain scores on level of comprehension for those students that scored below the fiftieth percentile on speed of comprehension. The chi square was

2.692151. The region of significance for chi square with 2 degrees of freedom was 9.21. This hypothesis was accepted.

As indicated in Table XVIII, eleven students out of nineteen made some gain or great gain on workbook. For the machine group only nine out of twenty-five made some or great gain. It appears from the data that more students who scored below the fiftieth percentile on speed of comprehension on pre test made greater gains on workbook.

Table XIX shows analysis of speed of comprehension for students who scored below the fiftieth percentile on speed of comprehension on pre test.

TABLE XIX

ANALYSIS OF SPEED OF COMPREHENSION GAINS
FOR STUDENTS WHO SCORED BELOW THE 50TH PERCENTILE
ON SPEED OF COMPREHENSION ON PRE TEST

	N.G.	S.G.	G.G.	TOTAL
Machine				
Expected frequency	6.82	12.50	5.68	25
Observed frequency	9	10	6	
Workbook				
Expected frequency	5.18	9.50	4.32	19
Observed frequency	3	12	4	
Total	12	22	10	44

Chi square 2.813908

Hypothesis 11. There was no significant difference between machine and workbook gain scores on speed of comprehension for those students that scored below the fiftieth percentile on speed of comprehension. The chi square was 2.813908. The region of significance for chi square with 2 degrees of freedom was 9.21. This hypothesis was accepted.

It appears from the data that students who scored below the fiftieth percentile on speed of comprehension might make more gain in speed of comprehension using the workbook method.

Students were asked at the completion of the course to fill out a student evaluation sheet. Table XX shows the results of the student evaluation.

TABLE XX

STUDENT EVALUATION RESPONSES

	yes	no
1. Has this course helped improve your reading skills?	96%	4%
2. Have you enjoyed taking this course?	92%	8%
3. Do you feel this course will help improve your grades in your academic courses?	98%	2%
4. Do you now enjoy reading more than you did before you took this course?	69%	31%

The students expressed the opinion that the course had helped them improve their reading skills and that it would help them improve in their academic courses. Sixty nine per cent felt the course had helped them to enjoy reading more.

CHAPTER V

SUMMARY AND CONCLUSIONS

Purpose of the Study

The principle objective of this study was to evaluate the college reading improvement course at Kansas State College of Pittsburg, Pittsburg, Kansas, and to evaluate gains made by students while taking a six-weeks reading course. If gains were made, the objective was then to evaluate methods to determine whether one method of instruction was more valuable than another for students with various pre test profiles.

Conclusions

The findings indicated that students using machine method made significant gains on vocabulary, speed of comprehension, and total reading. There were no significant gains on level of comprehension on the machine method.

Students using the workbook method made significant gains on vocabulary and total reading. There were no significant gains on level of comprehension or speed of comprehension by the workbook method.

It appears that the machine method is more valuable generally in increasing speed. There was no significant

gain in level of comprehension using workbook or machine. Apparently neither method was suitable to increase level of comprehension. Further research is needed concerning methods of improving level of comprehension.

In the study of groups of students below the fiftieth percentile, all the total chi square values were insignificant. This would indicate that students would not make greater gains by being placed in groups according to pre test scores. In the observation of individual cells in some of the tables, the total chi square value may have concealed, to an extent, gains made by one method as opposed to the other. This problem needs further investigation using a different statistical method.

The students expressed the opinion that the course was of value and that they felt they had made gains. Several students continued with the program on their own, and others enrolled for another course. Several students stated that they felt that a reading course should be required for all freshman.

Six foreign students enrolled in the course. They were among the students that dropped the course after taking the pre test. One foreign student stated that he dropped the course because he felt it would be too difficult. A course should be offered to foreign students only. Research on

such a course would be of value in planning future programs for foreign students.

Recommendations

1. Students whose grades are unsatisfactory should be encouraged to enroll for a college reading course.
2. Further research is recommended using foreign students as a group in order to determine what materials will benefit them most.
3. Further research on future programs to evaluate reading gains is needed.
4. In observing individual cells in Table XI, there was an indication that students who scored below the fiftieth percentile on vocabulary on pre-test made more gains in vocabulary on machine method. Data in Table XI should be investigated using a different statistical method.
5. In observing the individual cells in Table XII, it appears that neither method helped students low in vocabulary make gains in level of comprehension. Research is needed concerning methods of improving level of comprehension for such students.
6. Table XIII seemed to indicate within cells that more students who scored below the fiftieth percentile on the vocabulary pre-test made some or great gain on workbook than expected, and less than expected made more gain and great gain using machines. This data needs to be investigated

using a different type of statistical analysis.

7. It appears from the data in Table XIV that students who scored below the fiftieth percentile on level of comprehension might make more gain in vocabulary by using the machine method. This needs further investigation using a different statistical method.

8. The data within cells in Table XV indicated that students who score below the fiftieth percentile on level of comprehension might make greater gains in level of comprehension using workbook method rather than machine method. This needs further investigation using a different statistical method.

9. It appears from the data in the individual cells in Table XVI that students who scored below the fiftieth percentile on level of comprehension made more gains in speed of comprehension on workbook method. This needs further research by a different statistical method.

10. The data within cells in Table XVII indicated that students who score below the fiftieth percentile on speed of comprehension might make greater gains in vocabulary using the machine method. This needs further investigation using a different statistical method.

11. Table XVIII may indicate that students who score below the fiftieth percentile on speed of comprehension make greater gains in level of comprehension using workbook.

This data needs to be investigated using a different type of statistical analysis.

12. Table XIX seemed to indicate that more students who scored below the fiftieth percentile of speed of comprehension made gains in speed of comprehension using workbook method. This data needs to be investigated using a different type of statistical analysis.

13. The statistical evidence does not support these recommendations but subjective judgments based on clinical experience lead us to recommend

(a) Research be conducted on an individualized program where students are listed and the supervisor plans a program for each student.

(b) Research be conducted concerning the value of counseling as a part of the college reading improvement program.

APPENDIX A

1. Has this course helped improve your reading skills?
2. Have you enjoyed taking this course?
3. Do you feel this course will help improve your grades in your academic courses?
4. Do you now enjoy reading more than you did before you took this course?

using a different type of statistical analysis.

7. It appears from the data in Table III that students who scored below the fiftieth percentile on level of cognitive behavior might make more gain in vocabulary by using the machine method. This needs further investigation using a different statistical method.

8. The data within each in Table IV indicates that students who score below the fiftieth percentile on level of comprehension might make greater gains in level of cognitive behavior when working with the machine rather than with the method. This needs further investigation using a different statistical method.

9. It appears from the data in the Appendix that students who scored below the fiftieth percentile on level of comprehension might make more gain in level of cognitive behavior when working with the machine rather than with the method.

APPENDIX B

10. It appears from the data in the Appendix that students who scored below the fiftieth percentile on level of comprehension might make more gain in level of cognitive behavior when working with the machine rather than with the method.

11. It appears from the data in the Appendix that students who scored below the fiftieth percentile on level of comprehension might make more gain in level of cognitive behavior when working with the machine rather than with the method.

12. It appears from the data in the Appendix that students who scored below the fiftieth percentile on level of comprehension might make more gain in level of cognitive behavior when working with the machine rather than with the method.

13. It appears from the data in the Appendix that students who scored below the fiftieth percentile on level of comprehension might make more gain in level of cognitive behavior when working with the machine rather than with the method.

PRE AND POST TEST PERCENTILE SCORES
ON THE COOPERATIVE READING COMPREHENSION
OF THE COOPERATIVE ENGLISH TEST FOR THE MACHINE METHOD

Students	Pre		Level	Speed	Total	Post		Level	Speed	Total
	Voc.					Voc.				
A-2	69.4		56.3	69.2	69.2	77.3		83.7	84.1	77.3
A-3	8.1		12.8	11.4	8.8	37.5		37.2	21.6	32.8
A-4	46.7		58.7	52.	47.7	46.3		86	62.2	69.2
A-5	88.1		37.2	87.5	88.6	88.2		89.2	98.3	96.4
A-6	16		45	58.9	18.6	29.1		33.9	58.9	43.2
A-7	67.6		9.9	90.8	78	83.7		75	69.4	78.1
A-8	16		.04	.02	.06	9.3		17.5	14.1	11.4
A-9	60.7		12.8	5.4	20.9	60.7		14.4	14.4	32.8
A-11	54.8		24.9	48.9	52.3	77.3		77.3	83.8	48.9
A-13	3.2		6.8	3.8	1.8	4.9		45	17.1	8.7
A-14	54.8		83.7	40.3	43.2	46.3		65.7	58.9	52.3
A-18	3.7		6.8	5.2	2.9	29.1		13.4	12.4	14.4
B-1	21.8		14.5	2.2	14.4	36.7		45	30.7	33.9
B-2	46.3		9.7	14.1	11.4	77.3		33.9	30.7	60.9
B-3	91.7		45	17.1	11.4	91.7		56.3	24.8	60.9
B-4	69.4		56.3	48.9	43.2	77.3		57.3	40.2	60.9
B-5	54.8		45	17.1	33.9	54.8		83.7	88.7	77.3
B-6	45.7		24.4	14.4	20.9	78.1		86.6	69.4	71.8
B-8	61.7		65.7	69.6	69.2	77.3		45	69.6	77.3

A-2, A-3, etc. represent the students in each class that remained in the machine method. The scores are the pre and post test percentile scores for The Cooperative Reading Section of The Cooperative English Test for the machine method.

PRE AND POST TEST PERCENTILE SCORES
ON THE COOPERATIVE READING COMPREHENSION
OF THE COOPERATIVE ENGLISH TEST FOR THE MACHINE METHOD

Students	Pre Voc.	Level	Speed	Total	Post Voc.	Level	Speed	Total
B-9	96.7	45	40.2	76.6	91.7	56.3	58.9	77.3
B-10	3.2	9.7	5.2	2.9	4.9	17.5	48.9	18.6
B-11	96.7	89.2	69.6	89.9	91.7	65.7	58.9	84.6
C-1	37.5	37.5	21.6	26.8	37.5	58.7	41.3	39.5
C-2	12.6	9.8	40.2	18.6	36.8	33.9	48.9	43.2
C-3	12.6	56.3	58.9	25.5	46.3	33.9	58.9	52.3
C-4	36.7	45	17.1	18.6	54.8	75.8	48.9	52.3
C-5	1.1	3.1	2.1	.9	4.1	12.8	14.4	16
C-6	15.2	27.4	26.6	16	30.4	37.2	41.3	39.5
C-7	9.3	24.9	14.1	8.7	16	33.9	40.2	25.5
C-8	60.7	45	48.9	52.3	83.7	91.2	83.3	84
C-9	46.3	45	48.9	52.3	36.7	4.8	14.1	18.6
C-10	6.9	75.8	30.7	14.4	12.6	45	24.8	18.6
C-12	12.6	13.4	14.1	11.4	.5	7.7	14.1	1.8
C-13	36.7	3.2	5.2	11.4	61.7	7.7	21.2	43.2
C-14	96.7	75.8	94.1	93.6	96.7	93.8	84.1	93.6
C-16	54.8	83.7	69.6	60.9	69.4	56.3	95.8	84.6

B-9, B-10, etc. represent the students in each class that remained in the machine method. The scores are the pre and post test percentile scores for The Cooperative Reading Section of The Cooperative English Test for the machine method.

PRE AND POST TEST PERCENTILE SCORES
ON THE COOPERATIVE READING COMPREHENSION
OF THE COOPERATIVE ENGLISH TEST FOR THE WORKBOOK METHOD

Students	Voc. Pre.	Level	Speed	Total	Voc. Post.	Level	Speed	Total
1-D	54.8	45	69.6	60.9	46.3	56.3	58.9	52.3
2-D	78.1	58.7	77	78.1	88.2	98	93	93.6
4-D	16	65.7	21.2	18.6	46.3	75.8	58.9	52.3
5-D	29.1	6.8	10	14.4	61.7	33.9	40.2	52.3
6-D	1.5	1.9	1.1	.9	.9	7.2	7.5	2.8
7-D	46.2	83.7	78.1	60.9	54.8	45	88.7	69.2
8-D	36.7	33.9	30.7	33.9	40.6	52.4	46.2	60.6
9-D	12.6	2.3	3.4	4	15.2	37.2	41.3	26.8
10-D	15.2	21.8	31.8	20.9	16	17.5	30.7	25.5
11-D	11.7	17.2	11.4	8.8	11.7	27.4	11.4	8.8
12-D	83.6	89.2	99.8	89.9	91.7	93.8	84.1	89.9
13-D	67.6	68.4	83.3	71.8	82.4	76.2	91.2	82.4
14-D	54.8	45	48.9	52.3	61.8	56.3	69.6	69.2
1-E	54.8	75.8	58.9	60.9	91.7	93.8	88.7	93.6
2-E	58.4	83.7	69.6	60.9	77.3	56.3	69.6	77.3
4-E	9.3	3.2	1.9	2.9	21.8	9.7	14.1	14.1
5-E	12.6	17.5	17.1	11.4	29.1	45	40.2	33.9
6-E	46.3	45	30.7	33.9	52.5	37.2	52	47.7
7-E	21.8	24.9	21.2	18.6	21.8	17.5	24.8	25.5

1-D, 2-D, etc. represent the students in each class that remained in the workbook method. The scores are the pre and post test percentile scores for the Reading Section of The Cooperative English Test for the workbook method.

PRE AND POST TEST PERCENTILE SCORES
ON THE COOPERATIVE READING COMPREHENSION
OF THE COOPERATIVE ENGLISH TEST FOR THE WORKBOOK METHOD

Students	Voc. Pre.	Level	Speed	Total	Voc. Post.	Level	Speed	Total
8-E	.09	3.2	17.1	4.2	6.1	37.2	41.3	20.9
1-F	24.9	27.4	35.7	14.4	37.5	58.7	62.2	47.7
2-F	8.1	6.9	11.4	6.2	2.5	14.4	31.8	12.1
5-F	43.6	45	40.2	43.2	54.8	98	98.3	84.6
6-F	18.8	68.4	62.2	32.8	30.4	75	62.2	39.5
8-F	.09	24.9	30.7	6	4.9	33.9	14.1	8.7
9-F	30.4	50.1	11.4	16	18.8	37.2	35.7	32.8
10-F	69.4	89.2	78.1	77.3	77.3	56.3	78.1	77.3
12-F	37.5	17.2	31.8	32.8	45.7	38.2	62.2	56.2
13-F	11.7	21.8	26.6	16	18.8	27.4	41.3	32.8
14-F	24.9	48.6	52	20.9	37.5	58.7	62.2	47.7

8-E, 1-F, etc. represent the students in each class that remained in the workbook method. The scores are the pre and post test percentile scores for the Reading Section of The Cooperative English Test for the workbook method.

PRE AND POST TEST RAW SCORES
ON THE COOPERATIVE READING COMPREHENSION
OF THE COOPERATIVE ENGLISH TEST FOR THE MACHINE METHOD

Students	Voc. Pre.	Level	Speed	Total	Voc. Post.	Level	Speed	Total
A-2	42	23	38	40	48	24	33	41
A-3	17	9	13	15	26	19	22	24
A-4	29	21	28	29	38	22	28	38
A-5	50	28	39	46	53	26	52	53
A-6	25	22	35	30	31	17	30	31
A-7	36	29	44	40	49	22	32	41
A-8	25	6	6	16	23	13	17	20
A-9	34	14	14	24	36	18	14	25
A-11	37	26	31	34	48	25	38	38
A-13	16	14	14	15	19	18	18	19
A-14	36	26	28	32	38	32	31	35
A-18	17	14	16	17	32	12	15	29
B-1	27	18	20	24	35	18	22	29
B-2	33	15	15	24	48	17	23	36
B-3	49	22	23	36	55	20	20	38
B-4	41	23	31	36	48	23	25	37
B-5	37	21	23	30	40	25	42	41
B-6	29	17	19	24	39	23	31	35
B-8	38	24	37	38	49	18	34	42

A-2, A-3, etc. represent the students in each class that remained in the machine method. The scores are the raw scores for the Cooperative Reading Section of The Cooperative English Test for the machine method.

PRE AND POST TEST RAW SCORES
ON THE COOPERATIVE READING COMPREHENSION
OF THE COOPERATIVE ENGLISH TEST FOR THE MACHINE METHOD

Students	Voc. Pre.	Level	Speed	Total	Voc. Post.	Level	Speed	Total
B-9	54	22	29	41	55	21	29	42
B-10	16	15	16	16	19	13	27	23
B-11	53	37	38	46	55	22	31	43
C-1	26	19	21	24	30	18	23	27
C-2	23	29	29	26	34	17	28	31
C-3	23	23	34	24	36	17	32	34
C-4	31	21	23	27	38	23	31	40
C-5	7	10	10	9	15	10	14	15
C-6	20	17	23	21	26	15	23	25
C-7	21	19	21	21	19	17	26	23
C-8	33	27	33	33	49	26	38	44
C-10	20	25	27	24	25	25	21	23
C-12	6	10	17	12	23	16	21	22
C-13	31	12	15	23	43	10	19	31
C-14	53	25	43	48	60	27	39	50
C-15	42	26	46	44	45	32	50	48
C-16	47	26	37	37	45	25	47	46

B-9, B-10, etc. represent the students in each class that remained in the machine method. The scores are the raw scores for the Cooperative Reading Section of The Cooperative English Test for the machine method.

PRE AND POST TEST RAW SCORES
ON THE COOPERATIVE READING COMPREHENSION
OF THE COOPERATIVE ENGLISH TEST FOR THE WORKBOOK METHOD

Students	Voc. Pre	Level	Speed	Total	Voc. Post	Level	Speed	Total
1-D	36	21	38	37	38	21	38	38
2-D	40	22	36	38	54	38	45	50
4-D	25	24	24	25	36	23	29	38
5-D	30	14	19	25	44	17	26	35
6-D	12	9	9	11	9	11	11	10
7-D	35	26	41	38	39	26	41	40
8-D	32	20	26	29	36	26	30	33
9-D	23	11	14	19	21	15	22	25
10-D	20	16	24	22	26	14	24	25
11-D	19	15	17	18	19	18	19	19
12-D	46	20	33	40	55	27	40	48
13-D	40	20	36	38	45	24	40	43
14-D	36	18	32	34	43	21	35	39
1-E	37	25	25	36	55	27	42	49
2-E	36	21	37	37	49	20	33	41
4-E	22	12	12	17	29	11	16	23
5-E	24	18	22	23	31	18	24	28
6-E	33	22	26	30	35	25	25	30
7-E	28	19	24	26	29	19	26	28

1-D, 2-D, etc. represent the students in each class that remained in the workbook method. The scores are the raw pre and post test raw scores for the Cooperative Reading Section of The Cooperative English Test for the Workbook method.

PRE AND POST TEST RAW SCORES
ON THE COOPERATIVE READING COMPREHENSION
OF THE COOPERATIVE ENGLISH TEST FOR THE WORKBOOK METHOD

Students	Voc. Pre	Level	Speed	Total	Voc. Post	Level	Speed	Total
8-E	10	7	18	14	21	21	27	24
1-F	24	18	25	25	28	19	27	28
2-F	17	12	18	13	17	15	19	18
5-F	35	21	30	33	40	28	52	46
6-F	21	23	31	26	26	22	32	29
8-F	11	19	19	15	18	17	17	18
9-F	25	11	18	22	23	15	20	22
10-F	42	27	41	42	47	30	38	43
12-F	28	15	24	26	33	15	28	31
13-F	18	12	17	18	18	19	28	28
14-F	24	16	24	24	28	20	32	30

8-E, 1-F, etc. represent the students in each class that remained in the workbook method. The scores are the pre and post test raw scores for the Cooperative Reading Section of The Cooperative English Test for the Workbook method.

APPENDIX C

SQ4R. This is a method designed to help students develop effective academic skills through use of the following techniques.

1. Survey. Students must determine the structure, organization, or plan of the chapter, think about the title and guess what will be included in the chapter.

2. Question. Questions should be formulated by changing main heads and subheads into questions. This will result in a spontaneous attempt to answer the questions with information at hand.

3. Read. Students should read to answer each question by moving quickly and sorting out ideas. If the content does not relate to the question, it should be given only a passing glance. This is called selective reading.

4. Recite. Students should recite by answering each question in their own words.

5. "Rite." The question formulated by the student and his answer should be written.

6. Review. If review is both immediate and delayed, retention may be increased by as much as ninety per cent. This should be done by reading the written question and trying to recite the answers.

APPENDIX D

Materials that were used for students in the machine course were Controlled Reader, (EDL Controlled Readers, Educational Developmental Laboratories, Huntington, N.Y.): Rateometer, Model A (Chicago 5, Illinois: Iowa Reading Film, College Series, (Bureau of Audio-Visual Instruction, Extension Division, State University of Iowa, Iowa City, Iowa).

Controlled Reader. Controlled Readers (Educational Developmental Lab.)⁵⁶ are machines used for instructing individuals or groups in reading. Controlled reading involves the left to right presentation of 35 mm filmstrip reading materials at predetermined rates. The left to right control provides a way of directly training functional visual skills and directional attack. The covering and uncovering of materials at timed rates places a high premium on the ability to perceive correctly, remember well, and comprehend. Material may be presented at a rate from 60 to 1,000 words per minute, and the projector may be stopped and started at any time.

The stories are organized in sets according to grade levels. Each strip contains a complete story or article taken from a book or magazine and requiring approximately five minutes of reading time. The selections each have a vocabulary section preceding the story, which provides an

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Controlled Readers Manual, (Huntington, N. Y.: Educational Developmental Laboratories, 1964).

introduction of new, difficult, and technical words. Ten comprehension questions and answers are provided for each story.

Iowa Reading Films, (College Series), Bureau of Audio-Visual Instruction, Extension Division State University of Iowa, Iowa City, Iowa, 1958.⁵⁷ The Iowa Reading Films is a series of fifteen films that have a rate range from 260 to 520 words per-minute. The films present narrative materials, phrase-by-phrase, using white print on a black background to minimize eye strain. The background print remains dimly visible while successive, darkened phrases are presented. A progressive development of speed is accomplished through an increasingly shorter fixation time and increasingly longer phrasing. Each film is increased twenty words-per-minute above that of its predecessor with the exception of the last three films which increase by ten word-per-minute intervals. The first five films have three fixations per line, the middle five have two, and the last five have one fixation per line.⁵⁸ Ten multiple-choice comprehension questions accompany each film.

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Iowa Reading Films, College Series, (Iowa City, Iowa: Audio-visual Instruction, 1958).

58

Hazel Horn Carroll, "The Role of Reading Films," Starting and Improving College Reading Programs, VIII (April, 1959), 53.

There are seven ways in which these films are hypothesized as being helpful to individuals in improving their reading rate: (1) decreasing the number of regressions, (2) reducing the length of fixation periods, (3) increasing eye span recognition, (4) perfecting the returned sweep, (5) forcing more rhythmic saccadic movement, (6) decreasing sub-vocalization, and (7) increasing motivation to read better and faster.⁵⁹

Rateometer. Rateometer Model A (Psychotechnics) is a standard range model to guide reading speeds from 70 to 2500 words-per-minute.⁶⁰ The student reads ahead of a T-slide which proceeds down the page of print at a predetermined rate of speed.

Materials that were used for students in the workbook course were Be a Better Reader by Nila Banton Smith, How to Become a Better Reader by Paul Witty, and 30 Days to a More Powerful Vocabulary by Wilfred Funk and Norman Lewis.

Be a Better Reader. Be a Better Reader IV was designed to develop, maintain, and increase the basic reading abilities and study skills most needed by high school seniors working in various study areas.⁶¹

⁵⁹ Ibid., p. 44.

⁶⁰ Rateometer Manual. Model A. (Chicago: Audio-Visual Research)

⁶¹ Nila Banton Smith, Be a Better Reader, IV (Englewood Cliffs, N. J: Prentice-Hall, Inc., 1963).

There are fourteen chapters in book IV. The first chapter presents an introduction of the book and provides each student with an opportunity to check his reading speed and comprehension. In chapter two through seven, practice is provided for improving basic reading skills. The title of each chapter indicates the basic skill which is practiced: Chapter two, "How to Read Fast"; Chapter three, "Shopping Before You Read"; Chapter four, "Heeding Directional Words"; Chapter five, "Finding Main Ideas"; Chapter six, "Reading and organizing Details"; Chapter seven, "Reading to Recall Facts"; Chapter eight, "How to Skim"; Chapter nine, "How to Pronounce and Understand Unfamiliar Words." Several pages are devoted to vocabulary in each chapter. Students encounter the pronunciation and meaning of special words in literature, science, history and mathematics; attention is given to antonyms, synonyms, and multiple meaning of words, as well as to rules and practice in syllabication.

Chapters 10 through 13 contain special subject matter selections in science, history, literature, and mathematics. Chapter 14 discusses the use of reading skills in preparing for examinations.

How to Become a Better Reader. How to Become a Better Reader is divided into two sections. The first section explains how to become a better reader by following specific procedures, while section two presents reading selections

taken from magazines and newspapers for practicing the procedures previously outlined.⁶²

The first section of the book is divided into twenty lessons having the following headings:

- Lesson 1. Can you learn to read better?
- Lesson 2. How will better reading benefit you?
- Lesson 3. How much can you improve your reading?
- Lesson 4. What are your reading needs?
- Lesson 5. How do your eyes behave while reading?
- Lesson 6. How can you read for a purpose?
- Lesson 7. How can you read faster?
- Lesson 8. How can you learn to skim?
- Lesson 9. How can you find the main idea in reading?
- Lesson 10. How can you do careful detailed reading?
- Lesson 11. How can you evaluate what you read?
- Lesson 12. How can you appreciate creative writing?
- Lesson 13. How can you do study-type reading?
- Lesson 14. How can you build your vocabulary?
- Lesson 15. How can you improve your vocabulary?
- Lesson 16. How can you find the reading materials you want?
- Lesson 17. How can you best read a book?
- Lesson 18. How can you balance your reading?
- Lesson 19. How can you become a mature reader?
- Lesson 20. How can you keep on reading better?

Learning to Learn. Learning to Learn is a textbook designed for students in reading improvement classes, emphasizing the development of effective study skills.⁶³ It is an all-purpose workbook which gives some consideration to nearly all major study skills, and which discusses SQ4R, note taking, and test taking. This text contains practice exercises for each of these academic skills.

⁶²

Paul Witty, How to Become a Better Reader (Chicago: Science Research Associates, 1953)

⁶³

Donald E. P. Smith, op. cit., p. 45.

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