



1983

A COLLEGE READING PROGRAM: A STUDY OF EFFECTS ON GRADES, UNITS COMPLETED AND COLLEGE RETENTION

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A COLLEGE READING PROGRAM: A STUDY OF EFFECTS ON
GRADES, UNITS COMPLETED AND COLLEGE RETENTION

A Dissertation
Presented to
the Faculty of the Graduate School
University of the Pacific

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by
Dixie Diddock

1983

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1983

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A COLLEGE READING PROGRAM: A STUDY OF EFFECTS ON
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Abstract of Dissertation

Reading deficiencies among entering college students have caused an increase in the number of college reading programs. These reading programs have taken a variety of forms; however, the goals for these programs were directed consistently toward increased GPA, retention and an ability to maintain an acceptable unit load. These criteria were used to evaluate a reading improvement program at the University of the Pacific which was developed by Sanders. This program reflected the findings of her meta-analysis of college reading programs and was eclectic in design.

Effects of the reading program were evaluated based on (1) GPA at the end of two years, (2) number of units completed in two years, and (3) retention in college at the University of the Pacific during the entire two year period. The experimental and control groups were chosen from entering freshmen students during the fall semester of the years of 1976 through 1980. Matching was done carefully on the bases of beginning reading comprehension (Raygor Reading Comprehension score) and school related attitudes (Raygor Study Skills Inventory). Complete data were available for ninety-seven pairs.

Hypotheses tested dealt with the differences in outcomes between the groups and within the experimental group population. It was found that the groups showed no significant differences in retention, GPA or number of units completed at the end of a two year period. Within the experimental group no differences were found in the above variables due to the sex of the student or the amount of reading gain evidenced at the end of the semester of instruction. School related attitudes were related to GPA and number of units completed; reading comprehension related to GPA. No relationships were found to retention in college. Average reading rates of the experimental group were lower than the class average suggesting a partially remedial population rather than developmental.

It was recommended that changes be made in the reading program. Remedial and developmental students should be given separate instruction. An androgogical approach was suggested as well as promotion of the optimum reading rate rather than the variable reading rate.

Acknowledgements

I would like to acknowledge the assistance of others without whom this work would not have been completed.

Special thanks is in order to my committee and others. Particularly, my thanks go to Dr. Heath Lowry who was available when needed, helpful and supportive; to Dr. Bobby Hopkins for his patience in helping me with statistical procedures and interpretations; to Dr. Doug Smith who was helpful with suggestions for developing control factors and in making needed information available from the Student Advising Office; to Dr. Roger Reimer whose logical observations aided me in clarifying details of this study; to Dr. Marge Bruce, a thanks for suggestions and grammatical notations.

Others deserving special mention include Dr. Margaret Langer and Dr. Lee Fennell who provided access to needed information at the Academic Skills Center and at the Office of the Registrar. I would like to thank Dr. Victoria Sanders for her suggestions and support, and Dr. Louis Gates for his help with the computer.

My typist, Mary Duncan, deserves a special note of thanks for her competence and pride in her work.

In a less direct manner, others have played an equally important role. Here I refer to my friends and family. Friends have survived being ignored while I plodded on with this study. My family contributed also. My father

who did not live to see this completed, had an unfaltering faith in me which gave me faith in myself. My mother and sister never failed to be supportive of my efforts. Finally, what can be said about four grown children who still believe their mother can do anything?

Dixie Diddock

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Chapter 1

THE PROBLEM

INTRODUCTION

The open admissions policy in colleges, which began following World War II, brought with it at least one of the problems that critics predicted.¹ As a broader cross section of Americans joined the college ranks, students showed more evidence of reading which was inadequate to cope with college level studies.² The parents of college students did not realize that a side effect of open admissions for all would be lowered average attainment; and they were alarmed at the lack of reading ability of many college-bound students. College faculties also felt frustrated as they attempted to build conceptual frameworks for students who lacked an adequate foundation in reading, and especially in inferential comprehension.³ Because of public demand and increased frustration on the part of college faculties most colleges now offer course work aimed at meeting students' needs by increasing reading skills.⁴

¹Martha J. Maxwell, Improving Student Learning Skills (San Francisco: Jossey-Bass, 1979), p. 5.

²Alvin C. Eurich, The Reading Abilities of College Students--After Fifty Years, U. S., Educational Resources Information Center, ERIC Document ED 182-742, 1980.

³Charles L. Thomas, "The Minimum Competencies of Minimum Competency Testing," Viewpoints in Teaching and Learning, Summer, 1980, p. 32.

⁴Maxwell, op. cit., p. 5.

Originally, these reading programs were aided either directly or indirectly by government moneys, such as the G. I. Bill, and government loans and grants.⁵ Now, however, these sources of funds are largely diminished and colleges are forced to make choices; as an economist would state it, too few dollars are being chased by too many programs. If reading programs are to prove themselves as being a worthwhile investment in aiding students' academic needs in college, hard data must be found which substantiate their value.⁶

Evaluation of reading programs has been difficult because types of programs and methods of research used in evaluation vary widely.⁷ Even though the types of reading programs appear to be characteristic of particular types of institutions, these programs could be substituted at the other types of institutions and should be considered as an option available to all post-secondary institutions. For example, the individualized approach most commonly found in community or junior colleges has been used in specialized or four-year colleges.⁸ Although reading/study skills courses which were usually tied to a specific subject

⁵Ibid., pp. 9-11. ⁶Ibid., p. 7. ⁷Ibid., p. 13.

⁸Ruth J. Kurth, "A Comparison of Small Group and Individualized Instruction in Junior College Remedial Programs," Reading Research Studies and Applications Twenty-seventh Yearbook of the National Reading Conference, eds., Michael L. Kamil and Alan J. Moe, Pub. National Reading Conference, 1979 (Clemenson, S.C.), pp. 231-35.

appeared frequently in schools specializing in a specific field or area of learning, some four year institutions have adopted this model.⁹ Finally, group instruction appeared as part of the curriculum frequently in a four-year institution because it answered general needs in many types of reading situations and was flexible in meeting the schedules of a broad number of students who were assumed to have mastered basic skills, but it has also been used at either of the other types of post-secondary institutions.¹⁰ In fact, this, along with some variation for individualization, appeared to be the most common approach. Because of the predominant use of some form of group reading/study skills approach, primary attention should be paid to validating or rejecting this means of meeting reading needs of college students deficient in reading.

Research on large group reading instruction has been based on relatively short time periods and has shown contradictory evidence.¹¹ For example, some studies showed significant positive results in terms of rate gain, G.P.A., or

⁹Mary K. Monteith, "Beyond Basic Skills Courses in Colleges to Basic Concepts and Content Area Reading," Journal of Reading (October, 1978), pp. 75-77.

¹⁰D. T. Pedrini and Bonnie C. Pedrini, "College Grades and Reading Abilities," Reading Improvement, 12 (Summer, 1975, N.2), p. 75.

¹¹Victoria Sanders, "A Meta-Analysis: The Relationship of Program Content and Operational Factors to Measured Effectiveness of College Reading-Study Programs," (Doctoral dissertation, University of the Pacific, 1979), 147.

standardized testing; other studies showed mixed or negative findings. Most of these studies reflected only the semester during which the reading instruction took place and failed to examine the reason reading courses were initially instituted, which was to help students raise their academic potential. Specifically it was expected that this instruction should help students to raise grades, stay in school until completion and/or increase the number of units they could successfully carry during a semester.

Many of these studies which used G.P.A. as an indicator of academic success found that this was a questionable measure, particularly when used alone. Few conclusions can be drawn simply on the basis of total G.P.A. since numerous other factors confound the results. For example, comparison of an "A" grade in an art course with an "A" grade in an English literature course as a basis of reading ability shows this basic fallacy. Furthermore, it was expected by some of the researchers that control groups accounted for the element of chance, but because many courses were not based on reading literacy, the possibility of a significant difference between an experimental and a control group was weakened. Thus outcomes based solely on G.P.A. could not be considered conclusive.

One study, a meta-analysis of reading programs done by Sanders, identified the components needed in a successful reading program. A "model course," incorporating these criteria and recommended by The Northern California Reading

Association was established as the Reading Efficiency Development course in the Academic Skills Center at the University of the Pacific.¹² This Reading Efficiency Development course has been fully operative since 1976.

The program Sanders adopted emphasized several important areas: (1) introduction to flexibility of reading rate, (2) comprehension, (3) critical reading, (4) study (text) reading, and (5) the practice of these techniques. As a supplement to twenty hours of formal instruction, the program included regular work in the Center's reading laboratory using controlled readers, the Miller text, Increasing Reading Efficiency, general textbooks and other practice materials. Students completing the semester's work received university credit. Since the reading approach used by Sanders conformed to data from her meta-analysis of the reading research available at that time, some evidence as to its effectiveness was expected through evaluating students two years after instruction was begun. The value of the course was expected to be evidenced through one or more of the following:

(1) students who enrolled in reading would have a higher Grade Point Average (GPA) than those with the same ability but not electing to enroll in it;¹³ the students who took the course would take more units per semester than the

¹²Ibid., pp. 255-56.

¹³Martha J. Maxwell, "Evaluating College Reading and Study Skills Programs," Journal of Reading (December, 1971), pp. 217-18.

control group; and/or (3) the students who participated and completed the reading course would be more likely to remain in college than those in the control group.

STATEMENT OF THE PROBLEM

Reading improvement programs were found at most colleges, yet research verifying their effectiveness over a long term was insufficient. Furthermore, administrators in higher education needed data helpful in establishing priorities for use of finances for these reading programs. For example, they asked questions such as the following: Did a group instruction reading program solve academic problems for the college student who felt his reading skills were inadequate? Which types of students were helped most? Least? If the programs were to be given continued financial support, could some verification of their effectiveness be found? Could these administrators find evidence of improved skills by examining increased grade point averages, in number of units completed, or in better retention rates among those students who have used the reading program services? If evidence strongly supported the validity of these programs, financing of such programs could be justified; if these programs failed to show such evidence, new approaches to correcting college reading difficulties were indicated. In short, answers to these questions could give administrators a more reliable basis for decisions concerning funding, as well as giving counselors better insights

for dealing with students.

HYPOTHESES

The following null hypotheses were examined regarding effectiveness of reading efficiency programs.

1. There is no significant difference in the cumulative G.P.A. between the control and the experimental group at the end of the two year period.
2. There is no significant difference in the number of units completed between the control and the experimental group at the end of the two year period.
3. There is no significant difference in the rate of college retention between the two groups at the end of the two year period.
4. There is no correlation between attitudes and G.P.A., units completed, or retention rate within the experimental group.
5. There is no correlation between sex and G.P.A., units completed or retention with the experimental group.
6. There is no correlation between reading gain, units completed or retention within the experimental group.

ASSUMPTIONS

This study was based on a single reading improvement program in a university setting. That the sample was representative of college students who felt their reading skills needed improvement was assumed. Thus, at least some generalizability to other settings was likewise assumed.

It was assumed that the course, Reading Efficiency Development, maintained sufficient consistency over the four years from which the students were chosen for study to give validity. Some changes were made in the number of hours of instruction and specific materials. However, the same director remained throughout this period.

From the Raygor Study Skills Test, the Inventory of Study Habits and Attitudes was used to account for motivational and school related attitudes.¹⁴ The score which it reflected included subtests covering (1) general study habits, (2) relationships with teachers and courses, (3) motivation, (4) organization of effort, (5) concentration and (6) emotional problems. A seventh subtest, notetaking, was not included in the total score used. It was assumed that this instrument adequately measured school related motivational and attitudinal factors.

The Raygor Reading Test and Study Skills Inventory

¹⁴Alton L. Raygor, Study Skills Inventory, McGraw-Hill, Basic Skills System, University of Minnesota, 1970.

were used to match control to experimental groups. It was assumed that this was an adequate indication of similarity of reading ability.¹⁵

It was assumed in this study that improvement of reading manifested itself in one or more of the following behaviors: (1) increased G.P.A., (2) increased number of units successfully completed per semester, and/or (3) increased likelihood of retention in school within the two year period.

DELIMITATIONS

The following delimitations were established for the study:

1. This study was limited to a single university, the University of the Pacific, Stockton, California.
2. This study was limited to examining only incoming Freshmen during the four year period, from 1977 through 1980.
3. This study covered only the two years following the entry of these students into the University of the Pacific.

DEFINITIONS

For the purposes of this study, the following

¹⁵Raygor, Reading Test, McGraw-Hill, Basic Skills System, University of Minnesota, 1970.

definitions were used;

1. Androgogy: The art of teaching adults as opposed to pedagogy which relates to the art of teaching children.
2. Comprehension; The percentage of the material retained by the reader.
3. Developmental readers: The students reading within two grade levels of their grade placement were considered developmental readers.
4. G.P.A.: Grade-point averages at the end of the second regular academic year were used.
5. Index: The rate times the percentage of comprehension (e.g., 200 w.p.m. x 90 percent comprehension equals a 180 w.p.m. index score).
6. Rauding; Rate at which both reading and listening occur at which maximum comprehension takes place.
7. Reading rate: Words per minute the individual read, abbreviated "W.P.M." in any given test.
8. Remedial readers: The students reading more than two years below their grade placement were considered remedial readers.
9. Retention: Students who maintained constant enrollment during the regular academic years were considered retained.
10. Units: The units counted were those from courses for which the given student received

credit between September and May of the regular academic years in question.

PROCEDURES

The procedures used in this study consisted of several steps needed to complete the investigation. The sample groups were established. The experimental sample was identified then the control sample was matched to it. Data were collected from various sources and statistical procedures were performed. A detailed description of these procedures follows.

Samples

The samples were drawn from entering Freshmen students at the University of the Pacific. The experimental sample was selected at random from those students who successfully completed the Reading Efficiency Development course during their fall semester at the University of the Pacific during the years 1977, 1978, 1979, and 1980. By drawing from different years, the effect of any single class or instructor was minimized. Each experimental group included a total of twenty-five from each of the four years. Selection of the group was done through use of class rosters provided by the Academic Skills Center.

The control group was established by matching Raygor Reading Comprehension Test scores, and the Raygor Inventory of Study Habits and Attitudes from the Raygor Study Skills Test. This group also contained twenty-five from each school

year. In summary, there was a total of one hundred students in the experimental group and one hundred in the control group.

Data Collection

Data collected for both groups were obtained through the Student Advising records and the Registrar's Office. The following information was pertinent and was collected:

(1) cumulative grade point average at the end of the Sophomore year; (2) number of units earned during the two regular school years; (3) retention of the student enrollment at the University of the Pacific for the Freshman and Sophomore years; (4) scores from the Raygor Study Habits and Attitudes Inventory; and (5) the Reading Comprehension Test.

Further information was gathered from the Academic Skills Center concerning the experimental group. This included actual reading gains of these students measured in the change of their Index scores. The sex of a student was also recorded.

When data collection was completed, all of the records containing names of students were destroyed. Confidentiality of individual students was maintained by avoiding the use of the names of individual students.

Statistical Measures

The researcher evaluated these data through use of a computer by using various statistical measures. All of the hypotheses were subjected to a Correlation Coefficient

analysis. Further investigation was done through use of a two way ANOVA with an .05 alpha level on hypotheses one, two and three with a Breakdown procedure used to control for year.

SIGNIFICANCE

At present, millions of dollars are spent yearly at the higher education level for developing reading efficiency. Short term gains shown only by increased reading rates at the end of a course without verification of a longer term improvement in skills seemed to be inadequate justification for these expenditures. If informed priorities are to be set by college administrators, certainly more knowledge of long term effects on academic achievement is needed which indicates levels of effectiveness of these programs and types of students most likely to profit by them. If these programs do bring about change in student success, more emphasis and funding is justified. Studies which are currently available fail to adequately substantiate student benefits resulting from the programs. This study could help the administrator evaluate potential benefits of reading programs and make funding decisions regarding maintaining or changing them based on their actual merits.

OVERVIEW

In this chapter the growth of reading programs at the college level and the difficulties involved in their

assessment were introduced. It was suggested that research concerning the effectiveness of these programs be based on the goals and purposes for which the programs were designed. These goals and purposes include the following: (1) change in G.P.A., (2) change in number of units completed per semester, and (3) change in retention rate in college. A particularly satisfactory subject for such a study, a specific program at the University of the Pacific that used research based instructional procedures, was identified in this chapter. Hypotheses were stated and procedures were elaborated. In Chapter 2 the literature relevant to this study will be reviewed in detail. Description of the reading course, methods of data collection and statistical analysis used will be expanded in Chapter 3. In Chapter 4, the results of these procedures will be given. A summary of the entire study in Chapter 5 will complete the study.

Chapter 2

REVIEW OF THE LITERATURE

INTRODUCTION

The threat of adult illiteracy has become a concern of increasing intensity in the United States. This concern has led to massive efforts aimed at alleviating this growing problem. Federal efforts have included the Economic Opportunity Act of 1964, the Adult Education Act of 1966 and the Right to Read program in 1972.¹ Books have been written, editorials published, minimum competency levels established for high school graduation, yet the problem of illiteracy not only persists, but grows. Exact numbers of illiterates have not been established, partly due to inadequate census information and partly because illiteracy lacks a clear definition. However, it is estimated that the United States has at least three times the illiteracy rate as that of the Soviet Union, and that it includes somewhere between three and fifty-seven million people.² The lack of clear definition of illiteracy suggests that not only is illiteracy increasing, but the level of literacy of the semi-educated is also declining. Further declines in literacy

¹Jonathan Kozol, Prisoners of Silence, Breaking the Bonds of Adult Illiteracy in the United States, Continuum, New York, 1980, p. 4.

²Carman St. John Hunter and David Harman, Adult Illiteracy in the United States, A Report to the Ford Foundation, New York: McGraw-Hill, 1979, pp. 7-27.

levels have been evidenced by colleges as is indicated by lower levels of reading ability on entrance tests. This has lead to reading being taught in colleges.

Historical Development

Historically the problems due to inadequate basic skills of students in post secondary educational institutions in the United States were far from being rare. As early as 1852, Henry P. Tappan in his inaugural address as president of University of Michigan alluded to "rudimentary courses belonging rightfully in intermediate or primary schools being taught by too many American universities." And, a few years later, the Morrill Act of 1862 brought agriculture and mechanical courses to a college level. Soon after that a basic skill deficit caused Iowa State College to require that freshmen be able to read, write and do arithmetic or be placed in the preparatory department of the college. In 1874 Harvard's faculty requested and was given an English course in which students were aided with their formal writing. In an attempt to standardize college entrance requirements, the College Entrance Examination Board was founded late in the nineteenth century.³

The first forty years of the twentieth century witnessed an increased momentum toward college level remediation programs. By 1907 the need for remediation was noted by the prestigious colleges of Columbia, Princeton, Yale

³Martha Maxwell, Improving Student Learning Skills (San Francisco: Jossey-Bass, 1979), pp. 7-8.

and Harvard, who found that over half of their freshmen did not meet entrance requirements, but competition for students had led to their admission. Less than a decade later in 1915, college preparatory departments were to be found in 350 post secondary schools in the United States. Although elementary and secondary public schools had emphasized remedial programs in the 1930's, the end of the decade brought evidence of many colleges and universities establishing remedial reading clinics.⁴

Effects of World War II put strain on colleges; first to speed graduation during the war, then to provide for the millions of men seeking education under the G.I. Bill of Rights. During the post-war decade government funding aided colleges in meeting the increased demand for the development of reading programs produced as men who before the war would not have gone to post-secondary schools enrolled in unparalleled numbers. Since many of these men lacked reading and study skills, guidance centers and reading-study skills programs soon became institutionalized. However by the end of the fifties, community colleges began to ease the burden on universities. Furthermore, because of the Russian Sputnik, Federal attention turned from remediation and toward the top academic ten percent of students.⁵ Emphasis on reading programs in four year colleges was largely diminished.

During the next two decades, the sixties and seventies, the need for remedial programs at the

⁴Ibid., p. 8. ⁵Ibid., pp. 9-10.

college-university level once again became a concern. Anti-discrimination laws led many colleges to accept more economically and/or culturally disadvantaged students. In addition Federal law mandated acceptance of and provision for handicapped students. Open admission policies, policies that required admittance of any high school graduate into college, further increased the numbers of enrolled students who were deficient in basic skills. Further, nationwide Scholastic Aptitude Test (SAT) scores began to decline in the sixties, a decline which continued through the end of the seventies. Although causes for the SAT score decline were due to a multiplicity of factors and societal influences, the downward trend of the scores remained as evidence of increasingly weaker basic skills.⁶

During the seventies the development of reading skills programs at all levels had become a pressing issue. Personnel trained to develop college reading courses were scarce, as were programs providing the training. Also, lack of adequate research on the existing programs led colleges to develop these programs in a somewhat haphazard fashion. But programs did develop, as shown by a survey of fifty-two colleges and universities which found that seventy percent of these institutions included reading development coursework.⁷ Further, academic credit for this coursework was granted more

⁶Ibid., pp. 11-19.

⁷June Dempsey, "Survey of Educational Support Programs in Four Year Colleges and Universities" (Unpublished, 1979).

frequently. This practice by institutions reflected an effort to promote better retention rates among students.⁸ However, reading problems were not yet solved.

Literature and Related Research

College administrators and faculties continued to protest loudly regarding the lack of preparation for entering freshmen. As a larger number of students who entered college represented a broader scope of economic and social backgrounds, the concern grew. But, a question regarding the validity of the college administrators' and faculties' perceptions remains. Sources vary somewhat in the analysis of this problem; however, a definite downward trend was evident in the SAT scores which have a high correlation with reading ability.⁹ Studies of military test scores of seventeen year olds described scores in reading recognition as being maintained or raised over the past seventy years. But, these tests also showed a decrease in the ability of these seventeen-year olds to make inferences from reading, a higher level cognitive skill needed in college.¹⁰ Eurich

⁸Carolyn Walker, and others, "A Learning Center at Stanford?" ed. Gene Kersteins, Proceeding of the Seventh Annual Conference, Reading update: Ideals to Reality, Vol. VII (Oakland: Western College Reading Association, 1974), pp. 183-88.

⁹Martha Maxwell, Improving Student Learning Skills (San Francisco: Jossey-Bass, 1979), p. 17.

¹⁰Charles L. Thomas, "The Minimum Competency Testing," Viewpoints in Teaching and Learning (Summer, 1980), p. 32.

compared reading test scores of freshmen entering the University of Minnesota in 1978 with freshmen and high school seniors tested there and at a Saint Paul High School fifty years earlier, and found that present college freshmen read no better than high school juniors or seniors fifty years ago.¹¹ There remained little question that the entering college population was less prepared, thus it is hardly surprising that the concern for reading skills continued to grow.

Approaches to Reading Instruction

Concerned college personnel developed a variety of approaches in attempting to meet the needs of the incoming freshmen; the unique needs of each institution tended to act in the shaping of that institutions's reading program. Individualized, independent study programs were common in community colleges and evident at some four year colleges. Four year colleges and universities commonly used group instruction of two general types. One type was based on a reading-skills course tied to a content area course such as biology, history, or writing. The other type developed as a general course to develop reading and study skills. Although many of these programs were experimental, the majority became either ongoing elements of the regular curriculum or a part of a special summer session.

¹¹Alvin C. Eurich, The Reading Abilities of College Students--After Fifty Years, Education Resources Information Center, ERIC Document ED 182 742, 1980.

Regardless of approach, the question of whether the programs fulfilled their purpose by significantly improving academic performance remained unclear,¹² partially because long standing evaluation criteria for programs lacked clear definition. Although demand for the programs from students and faculty members continued to cause retention and growth of these programs, the question remained regarding whether these students would have achieved as well without the university expense of maintaining the programs. A closer look was warranted.

Individualized Reading Improvement Programs

The individualized reading improvement program was designed to provide instruction aimed to remediate the specific student's reading skills weaknesses. It began with a thorough diagnosis of each student's strengths and weaknesses, then appropriate material was assigned to the student commensurate with his/her needs. Normally, such a program was planned concerning material to be covered, amount of time to be used, and frequency of tutoring and/or teacher conferences. Aid was usually available in these programs on an on-call basis which became time-demanding for the instructors.

¹²Richard P. Santeuson, "Do College Reading Programs Serve Their Purpose," Reading World, May, 1974, pp. 258-59; Eugene S. Wright "The Effect of Reading Training on College Achievement," The First Yearbook of the North Central Reading Association, ed. Alton L. Raygor, 1962, pp. 36-7.

This type of program required a high utilization of resources. That is, teacher-student ratios were kept low; tutors were provided; materials were broad and varied. Duplication of equipment was necessary to assure availability for simultaneous use by a number of students. Factors such as these caused this type of program to be an expensive approach to reading development.

Besides the expense, certain weaknesses were inherent in this approach. For example, the self-discipline needed to sustain the on-task behavior was frequently absent in students most needing this type of instruction. And psychological effects were at times negative since self esteem suffered when an individual felt singled out as needing special help.¹³ The individualized program, on the other hand, derived its strength from the ability to identify students' weaknesses, assign work to remediate those weaknesses, and provide individualized help at appropriate intervals. Methods and techniques for this approach are so varied that research lacks generalizability.

¹³Jim Bennett and others, Personalized Instruction In Compensatory Courses: A Follow Up Study at Eastfield College, Educational Resources Information Center, ERIC Document ED 150 535, 1978; Helen Aron, "A Community College Reading Program, What Is It, What Does It Do?" Journal of Reading, (Dec., 1978), pp. 231-35; Ruth J. Kurth, "A Comparison of Small Group Instruction and Individualized Instruction in Junior College Remedial Reading Programs," Reading Research, Studies and Applications, 27th Yearbook of the National Reading Conference, ed. Michael L. Kamil and Allan J. Moe (National Reading Conference, Clemson, South Carolina, 1979), pp. 174-75.

Group Instruction Tied to Content
Area Courses

Various disciplines and/or institutions with single majors found that teaching reading skills as a separate but specifically related course in conjunction with a content area course showed positive results on an experimental basis.¹⁴ Such reading-skills courses met regularly and followed the assignments and lectures of the content area course. Students were given specific directions on how to attack the study material assigned. The instructor who taught the skills-reading course attended the content area class sessions to be certain that the methods were applicable to the assignments and that the approach was appropriate.¹⁵ The content courses differed from biology to writing, but student surveys showed the outcome to be more meaningful to the participating student.¹⁶

¹⁴Caesarea Abartis and Cathy Colline, "The Effect of Writing Instruction and Reading Methodology Upon College Students Reading Skills," Journal of Reading (Feb., 1980), pp. 408-13.

¹⁵Clare Bedillion, Reading and Study Skills Programs in Higher Education: An Evaluation of One University's Needs, Educational Resources Information Center, ERIC Document ED 099 814, 1975.

¹⁶Carol M. Santa and Robert Blake Truscott, "A College Reading Program: The Integration of Reading, Writing, Speaking and Thinking Within the Content Areas," College Student Journal (Winter, 1979), pp. 391-97; Mary K. Monteith, "Beyond Basic Skills Courses to Courses in Basic Concepts and Content Area Reading," Journal of Reading, (Oct., 1978), pp. 74-77; Irving P. McPhail, "A Summer Reading/Study Skills Program for Black and Minority Health Profession Students," Reading World (Oct., 1978), pp. 48-66; Patrick J. Moran, Piggybacking Reading and Study Skills

Because students purported to find this approach more meaningful, proponents claimed that better transfer of learning occurred. While this indeed may have been the case, some questions have not yet been addressed. One yet to be answered is whether the reading and study skill techniques are generalizable to other courses both in the same and different subject areas. Also, establishing a sufficient number of content classes carrying a reading instruction class to amply serve the needs of the entire student body could be extremely difficult and expensive. Given these limitations, this approach merits consideration in academic circles.

Group Reading Instruction

One of the more frequently used traditional approaches to teaching reading skills was general group instruction. Class instruction in such a program covered a multiplicity of skills needed in various reading and study situations. Skills frequently taught included vocabulary, study skills, note taking, critical reading, content area reading, and rate and flexibility.¹⁷ The skills taught were generally applicable to a broad range of content

onto College Courses, Educational Resources Information Center, ERIC Document ED 186 879, 1980.

¹⁷James Edward Herman, "The Effect of a Reading Improvement Program Upon Academic Achievement in College" (Doctoral dissertation, University of Connecticut, 1972), p. 140.

areas. However, since specific information concerning content was not included in most case studies, actual content of these courses may have varied greatly,¹⁸

Besides the variation in content, these courses were not consistent in hours of class instructional time, frequency in meetings and number of weeks in progress. In fact, it is difficult to ascertain the amount of total instructional hours from many of the descriptions within the studies.¹⁹ Normal class size apparently was between eight and twenty-five students. Methods of determining placement in these courses was voluntary, advised or required. Advising or requiring the course was normally based on placement test scores or required of all students in the group regardless of ability. A few institutions required enrollment in a reading or study skills course for all entering freshmen.²⁰ This type of course was predominantly used in determining long term academic effects through longitudinal studies over a period of semesters or terms.

¹⁸Victoria Sanders, "A Meta-Analysis: The Relationship of Program Content and Operation Factors to Measured Effectiveness of College Reading-Study Programs" (Doctoral dissertation, University of the Pacific, 1979), p. 186.

¹⁹Ibid., p. 144.

²⁰Martha Thompson, "Developmental Education at Vincennes," Community and Junior College Journal (May, 1979, pp. 41-43).

Combined Approaches to Reading Instruction

Although many programs appeared to be of one specific type, many of the large group programs combined some elements of the individualized and content-tied instruction. In a meta-analysis of a large number of reading programs, Sanders showed that the most effective programs incorporated some aspects of the individualized and content-tied approaches. Her analysis indicated that individualized conferences and counseling were needed as well as instruction in the student's content area.²¹

The course, Reading Efficiency Development, which conformed with Sanders' research afforded an excellent example of a combined approach. The course included twenty hours of class instruction which were supplemented by three personal conferences during which diagnostic information was obtained from the student and counseling regarding any needed individualization was planned. Special procedures designed for individuals exhibiting particular needs were practiced during the laboratory time which accompanied the course. Group class meetings were kept to less than twenty students which allowed students to bring text books from other courses into the class for questions, discussion of text format

²¹Sanders, op. cit., p. 190.

and study reading suggestions. The incorporation of the strengths of the various reading approaches became a single course through this approach. Total effectiveness of Sander's program had yet to be ascertained.

Evaluation of Group Instruction Reading Programs

In an effort to find more conclusive evidence of reading programs' effectiveness as well as the most satisfactory program, numerous research studies have been carried out. Problems of how best to evaluate programs has led to wide diversity in methodology used for research. Standardized testing has been widely criticized. Control groups to be used for comparison have been lacking in validity or poorly chosen. Evaluation immediately following the end of a course may not have reflected retained gains accurately or the effect of gain on academic achievement. Grade point averages were the singular measure used at times. Although prevention of college drop-outs was a purported purpose of reading programs, retention rates seldom were included in research reports. Ability to cope with the class load was rarely discussed and the purpose of reading programs was seldom explored in terms of units successfully completed. Examples of a number of these weakened reports follow.

A program evaluation by Stebens and Belden covered five semesters which gave it strength as to true long range

effects. The control group was matched to participants on the basis of nonparticipation, scholastic ability as measured by test scores, and sex. In a test, retest design, a standardized reading test, the Nelson Denny Reading Test (Forms A and B) was used as criterion for evaluation of program effects.²² However, use of the standardized test as the sole criterion for evaluation may have been a weak evaluation method.

Maxwell, prominent in the field of college reading instruction, showed concern for appropriate evaluation of college reading programs. She was critical of the use of standardized tests for program evaluation for a number of reasons. For example, the results show a skewed, rather than normal distribution, due to the low abilities of the students in reading programs. Further, standardized tests rarely measure program goals or reflect the gains due to a short instructional period. Alternate test forms reflect different raw scores for equal achievement and give spurious results. Improved academic achievement, according to Maxwell, was the goal of these programs and this should have been the primary criterion for their evaluation. She stated that for evaluation to be meaningful, adequate control groups were required and that since all college courses were not reading oriented, a better indication of

²²Duane Stebens and Bernard R. Belden, "Retention of Gains in Reading After Five Semesters," Journal of Reading (February, 1970), pp. 339-44.

improved reading would be the exclusive use of grades from literary oriented coursework. Finally, she suggested that another appropriate source of evaluation might be the student self report.²³

Staley and Smyth, in evaluating a college reading program, looked at four criteria: post-test reading scores, grade point ratios (GPR), grades in English, and attrition rates from the college. The study concluded at the end of the sophomore year. Their experimental group was comprised of freshmen who enrolled in the reading course; the control group consisted of all freshmen who were enrolled at the college, including the experimental group. The lack of a more adequate matching of the control group population seriously marred their study, particularly since the control group contained members of the experimental group.²⁴

Two studies were concerned with high risk or low verbal skilled students. In a descriptive study Harshbarger investigated the effect of a four year support program on reading achievement and attrition rate from

²³Martha J. Maxwell, "Evaluating College Reading and Study Skills Programs," Journal of Reading (December, 1971), pp. 214-21.

²⁴Nancy K. Staley and Thomas J. Smyth, "Evaluation of the Effectiveness of a College Reading Program Using Four Criteria," Reading Research Studies and Applications Twenty-eighth Yearbook of the National Reading Conference, eds. Michael L. Damiel and Alden J. Moe (Clemenson, South Carolina: National Reading Conference, Inc., 1979), pp. 182-84.

college.²⁵ Generally, due to the nature of descriptive studies, statistical evidence was lacking. Sawyer's study dealt with students exhibiting high quantitative and low verbal scores.²⁶ A control group was employed but methods of determining its members were not stated. Two primary points, grade point average and attrition rate, were considered in this study that covered a one year time period, instead of two as Harshbarger's did.

In another study evaluating freshmen entering college with low English test scores, Reese used random sampling of the entire class as a control group.²⁷ Pre and post-testing was done to evaluate reading improvement, and grade point averages were compared between the two groups. Another aspect assessed was performance on the basis of sex. This study concerned itself only with students completing the freshman academic year.

In his evaluative study, Usova compared freshmen students enrolled in the reading program with all other freshmen students who were not enrolled. Although not

²⁵Mary Harshbarger, A University Reading and Study Skills Program for High Risk Students, Education Resources Information Center, ERIC Document ED 063 574, May, 1972.

²⁶Robert N. Sawyer, The Effect of Specialized Developmental Reading and Study Skills Instruction and Counseling on a Sample of Students with Above Average Quantitative and Below Average Verbal Skills, Education Resources Information Center, ERIC Document ED 031 385, 1969.

²⁷Thelma T. Reese, "Effectiveness of a College Reading Program" (Doctoral dissertation, Temple University, 1975).

matched, this experimental group represented the lowest forty-four students with the lowest predicted Grade Point Ratio (GPR) which is a weighted composite of high school standing (ninety-four percent) and Scholastic Aptitude Test verbal score (six percent). He used the mean predicted GPR for these students which he compared with the actual GPR at the end of the semester course. He also compared the college retention rate of the experimental group with the remainder of the class. Although a one semester study, Usova's choice of methodology gave it merit for consideration.²⁸

Burgess, Cranney and Larsen evaluated a reading program on the basis of GPR. In the study, they used an experimental group of a cross section of entering freshmen while the control group consisted of the entire class (including the experimental group). This resulted in an extremely weak control group. The cumulative GPR was compared between these groups at the end of the semester and at the end of the two year period. Included in their study was a discussion of the limitations of their study, particularly in terms of the weak control group and of the advantages of using Maxwell's criteria in evaluation of reading programs.²⁹

²⁸George M. Usova, "The Effectiveness of a College Freshman Reading Study Skills Course," Reading Improvement (Fall, 1979), pp. 190-91.

²⁹Barbara A. Burgess, A. Garr Cranney, and Janet J. Larsen, "Effect on Academic Achievement of a Voluntary University Reading Program," Journal of Reading (May, 1977), pp. 644-46.

Swindle, too, compared GPR's in an effort to analyze the effectiveness of a reading skills program in a study that covered a span of four years. He also included a follow-up survey questionnaire of student attitudes in assessing the value of the program. In this study, groups were all male, and adequately matched on the basis of major field of study and SAT scores.³⁰

Two studies came from the Indiana University program concerning the effectiveness of their reading program. The first in 1954 was done by O'Bear who extended his study over three semesters using students who voluntarily enrolled in the reading program and matching a control group on the basis of age, sex, ACT scholastic aptitude test scores, and the ranking by thirds of their high school graduating class. Analysis was made, based on cumulative GPR and linguistic grade point ratio, by using credit point ratio. Further checks were made on the retention in college and, through group interview, on student attitudes.³¹

The second study covering a four year period from Indiana University was conducted by Sosebee in 1963. As criteria for evaluation, he used academic achievement,

³⁰W. Swindle, "Longitudinal Evaluation of the University Academic Performance of Students Previously Enrolled in a Program for Improvement of Learning Techniques" (Doctoral dissertation, Texas A and M, 1968), pp. 29-43.

³¹Harry H. O'Bear, "Changes in the Academic Achievements of Matched Groups in Remedial Reading and Non-remedial Students at Indiana University" (Doctoral dissertation, Indiana University, 1953), pp. 107-09.

drop-out rate, and student evaluation inventories. The experimental and control groups were matched on the bases of the bottom thirtieth percentile on the C2 English test, the bottom fiftieth percentile of the ACT and of the high school graduating rank.³² Each of these studies followed Maxwell's criteria although they were done prior to her writing.

Ross evaluated on the bases of student satisfaction, longevity in college, and change in grade point average. Experimental students in her study were sophomores taking the course in reading. Control group membership, based on matched beginning GPA, on not enrolling in the reading course, and on being a sophomore at Metropolitan State College during that specific semester, was not adequate since characteristics of the reading-course students were ignored. A survey evaluation of student attitudes was also included as a part of the study,³³ which covered four academic terms.

In a comprehensively documented and reproduceable study, Herman matched pairs of students for assignment in experimental and control groups on the bases of sex, class

³²Allen Louis Sosebee, "Four Year Follow-Up of Students in the Indiana University Reading Program, 1958" (Doctoral dissertation, Indiana University, 1963), pp. 22-30.

³³Beth Pendleton Ross, "A Study of the Effectiveness of Reading 104 Developmental Reading Class at Metropolitan State College" (Doctoral dissertation, University of Colorado, 1980), pp. 23-35.

in college, total SAT score, cumulative grade point ratio, (CGPR), and attitude. Testing was done pre- and post-instruction and again fourteen months later. The CGPR was also determined for each of these time periods. Reading instruction was carefully described in the study which might well serve as a model for other studies.³⁴

Sanders, in the meta-analysis of reading programs discussed above, evaluated rate increase, comprehension, grade point average, vocabulary and study habits. This was an exhaustive study which included over six thousand students in a variety of reading programs. Limitations of this study were due to the paucity of information available concerning course descriptions of the programs evaluated: that is, the studies she evaluated were lacking in the information needed for generalizations to be made.

Throughout the literature review, poorly established control groups and little research of differences within the experimental group was evident. The effect of motivational factors appeared to be largely overlooked as an important factor in establishment of control group membership. Further, the difference in follow-up studies between those students with high reading rate gains and those with none or small gains did not appear. This within-group research as well as information on the importance of motivation could be of value in counseling concerning

³⁴Herman, op. cit., pp. 52-142.

registration for the course and as a teaching tool within the course. These factors, especially motivation needed further examination.

Goals of reading programs appeared to be largely ignored by many evaluating these programs, although most studies did make assumptions that the programs were in some way aimed at certain goals. Most studies addressed either retention in college or grade point average. Seldom were the reading program's goals or general reading coursework goals mentioned as a factor in the program's evaluation.

Research Outcomes

Conclusive agreement on the effect of a reading study skills program was limited throughout these evaluative studies. In general there appeared to be some benefit gained through participation. Notably, student attitudes concerning reading instruction were consistently favorable. However, since these attitudinal ratings were subjective, no further discussion will concern them.

The only study using a standardized reading test design showed positive results. It found reading growth in both the experimental and control groups, but with significantly more growth in the experimental groups.³⁵ However, as pointed out, standardized testing may be a weak evaluative tool.

³⁵Stebens and Belden, op. cit., p. 343.

Post-test reading scores in studies using reading rate for evaluation showed immediate positive results. This was included as part of the evaluation done by Staley and Smyth.³⁶ Reese also evaluated improvement in reading in that manner with positive findings as did Sanders in her meta-analysis.³⁷ Because these reading rates may not have been retained and used, value of the scores in improvement, although statistically significant, may have been of limited value.

Studies finding no significant difference in academic achievement include those by Staley and Smyth, Swindle, Sosebee, Reese, and Ross.³⁸ Staley and Smyth in their study did find improved grades in English coursework.³⁹ In a surprising outcome, O'Bear found the control group's achievement exceeded that of the experimental group.⁴⁰

In contrast, Usova, Herman, Sawyer, and Burgess Cranney and Larsen found positive long-term academic results.⁴¹ Although these studies all had seemingly

³⁶Staley and Smyth, op. cit.

³⁷Sanders, op. cit., p. 226.

³⁸Staley and Smyth, op. cit., p. 184; Swindle, op. cit., p. 72; Sosebee, op. cit., p. 72; Reese, op. cit., p. 48; Ross, op. cit., p. 71.

³⁹Staley and Smyth, loc. cit.

⁴⁰O'Bear, op. cit., p. 152.

⁴¹Usova, op. cit., p. 191; Herman, op. cit., p. 147; Sawyer, op. cit., p. 10; Burgess, Cranney and Larsen, op. cit., p. 646.

adequately matched control groups, that alone fails to explain the difference as others, such as O'Bear's, were also seemingly adequately matched. Further, Herman's results showed that the difference in benefits increased in favor of the experimental group over a longer period of time while Burgess, Cranney and Larsen showed a declining advantage. Burgess, Cranney and Larsen also warn that although the difference in scores may be statistically significant, the actual difference may be negligible.⁴² For example, lack of control for motivational factors in matching of groups may account for the different outcomes of these studies.

Research concerning retention of the student in the college program fared better, with six of the eight studies showing positive results. While no significant difference was shown in the two studies by Ross and by Sosebee,⁴³ contrasting results were shown in higher retention rates in the studies by Harshbarger, Sawyer, Swindle, Herman, Usova, and Staley and Smyth.⁴⁴ This appears to be one of the stronger effects of reading instruction.

The findings discussed above represent a cross section of more carefully designed studies done during the past

⁴²Burgess, Cranney and Larsen, loc. cit.

⁴³Ross, op. cit., p. 72; Sosebee, op. cit., p. 73.

⁴⁴Swindle, op. cit., p. 75; Herman, op. cit., p. 149; Usova, loc. cit.; Staley and Smyth, loc. cit.; Harshbarger, op. cit., p. 7; Sawyer, op. cit., p. 11.

thirty years. Change in the college population during this time appeared to have made little difference in evaluation results. Increase in reading rate at the conclusion of the reading instruction appeared to be uniformly positive among most students. However, these rate gains may not be retained, or, as shown in several studies, students may gain in rate without reading instruction. And, although researchers found some programs to have a positive effect on grades, others found no difference from students not enrolling in a reading course. Retention in college reflects ability to cope academically; however, only three-fourths of the studies showed evidence of improved retention rates. Most students were pleased with the improved study reading techniques gained from the reading courses. Although if students did read faster and study more effectively, these students would have been likely to have completed more academic units successfully. Research on increased course load appears to have been overlooked as a reasonable outcome of improved reading skills. Investigation of this possibility was suggested. Also, apparent lack of sufficient previous investigation of within-group differences suggested other unexplored areas of research. Further, few studies attempt to control for motivation while forming the control group which may have caused the contradictory results.

NEW DIRECTIONS

Some new directions suggest possibilities for

changes in reading instruction. One, androgogy, has been known since the time of Socrates, but little has been done to incorporate this knowledge into instruction or to fully investigate its implications.

At present, methods used in teaching reading at the college level are primarily based on pedagogy, however an increasing awareness of androgogy as more adults return to school has caused questions concerning the applicability of pedagogical methods when used to educate adult learners. Adults do learn differently than children; both physical and psychological differences exist. Increased changes in cognitive styles lead to further differences in learning patterns. The adult learner is self-directed and relies more on a reservoir of experience and an analysis of that experience. Adults see the rejection or devaluation of their experiences as a rejection of themselves. Even motivational factors are significantly different for adult learners since adults seek practicality.⁴⁵ However little has been done to integrate the awareness of the adult learner into college reading instruction or reading improvement courses.

The second, rauding, has only recently developed and is based on empirical research. Rauding, a new area of reading related research promotes the concept of an optimum

⁴⁵Malcolm Knowles, The Adult Learner: A Neglected Species, second edition (Houston: Gulf Publishing Company, 1973), pp. 53-9.

reading rate, rather than the use of variable reading rates. According to this theory, when reading below or above a particular reading rate the comprehension drops in an almost linear fashion. The rate of reading and comprehension is dependent on the rate with which the cognitive process takes place. Thus, the theory that individuals can read at 1200 words per minute effectively is held to be only a theory with little supporting empirical data by Carver who has done considerable experimental research on the optimal reading rate. This rate he found to be tied to optimal auding rate, rate of listening, thus he coined the word to describe it as optimal rauding rate. His research provides strong support for his theory. The efficiency of comprehension peaked at about 300 words per minute for reading as well as approximately that for auding. The differences between reading and auding were caused by the pauses in speaking as opposed to the visual space on the written page according to Carver. This same optimal rate held for varying degrees of reading difficulty throughout his research findings. This research renders suspect the conventional theory supporting variable reading rates according to difficulty of material. On the contrary, 300 words per minute was the most efficient rate for the typical college student.⁴⁶ In fact, as early as 1961, Hardison suggested that a disservice to readers may

⁴⁶Ronald P. Carver, "Optimal Rate of Reading Prose," Reading Research Quarterly, Volume XVII Number 1, 1982, pp. 56-87.

result from encouraging a too fast reading rate.⁴⁷ If further research confirms these findings, serious attention should be given to aiding students in reaching their optimum reading rate.

Neither androgogy nor rauding were concepts attended to by college reading instructional courses. Attention to these concepts could lead to better instruction if these are accurate findings and if present instruction lacks verification of effectiveness.

SUMMARY OF THE CHAPTER

In this chapter the historical development of reading instruction at the post-secondary level was traced. This development was found to have begun in the mid-nineteenth century and grown sporadically since that time. However, only in the past ten years has it begun to be regarded as an aspect of university curriculum. And, as reading scores continue their downward trend, more focus on reading programs can be expected.

Programs emerging to fill the need have taken a variety of forms. Some utilized totally individualized instruction. A newer approach linked a specific content course with a reading skills class. Group instruction in increasing reading efficiency was commonly evident.

⁴⁷Richard Cheves. "Some Apparent Results of College Reading Improvement Programs Reconsidered in Terms of the Method of Measuring Improvement." (Doctoral dissertation, University of Southern California, 1961), pp. 101-2.

Finally, some combination of these approaches was evident in some eclectic approaches.

Evaluative research was neither uniform in practice nor intent. Many lacked adequate control groups; only one controlled for attitudinal factors. Frequently evaluation was not correlated with reading instruction goals. Researchers attempted to define benefits from the coursework in terms of student satisfaction, increased grade point average, increased reading achievement, and increased retention. Although some studies followed the students' achievement after completion of the course, many studies ended at that time. Within-group differences were largely unexplored.

Researchers did find some positive outcomes; however, most findings were mixed. In general, students were satisfied with their reading classes. Achievement of increased reading rate at the end of the reading instructional period improved for most students. Usually an improvement of college retention was reported among students who had had reading instruction and sometimes grade point averages improved.

New directions which are largely being ignored at present could offer possible alternatives or additions to post-secondary reading instruction. Methods compatible with the adult learner offer possibilities. Further the more radical optimum reading rate may change reading instruction in a dramatic way. Both concepts present challenges to present reading instruction.

Evidence is clear that further evaluation of reading-study skills programs is needed and that these studies should reflect careful choice of criteria, appropriately matched control groups, and an adequately described program which would allow its duplication. Evaluation of these programs can give increased insight to administrators and reading instructors as they probe for answers even as unprepared students become the norm rather than the minority.

Chapter 3

DESCRIPTION OF DESIGN AND PROCEDURES

INTRODUCTION

The purpose of this study was to examine the effects of the developmental reading course at the University of the Pacific. Students were drawn from four successive academic calendar years; then their progress was assessed two years following their participation in the reading program. This reading program conformed with Sanders' meta-analysis of college reading programs in the United States from 1960 through 1975. In this chapter a description of this program is presented and the details of methods and procedures used in this study are outlined.

The Reading Program

The reading program at the University of the Pacific began in the fall of 1976 as a resource course for students desiring developmental rather than remedial instruction. The following sections describe its history, the population served, the instructors, and the content. The section devoted to content was further divided into course lesson content, interviews, individualization and primary materials utilized.

History

The reading program was begun in the fall of 1976

and, by the fall of 1977, it covered a ten week period of instruction which included ten class meetings of approximately one hour each, weekly laboratory periods, and at least three individual conferences with the instructor during the semester. The course was given one semester unit of credit until 1980 when the unit value was increased to two units and instructional periods and laboratory each were increased to twenty hours. Attendance in classes and at regular laboratory sessions were mandatory requisites for satisfactory completion of the course. If absent, the student was required to arrange for attendance in an alternate section of the course or make-up work. The course was graded on a pass--no-pass basis; if the requirements were not met for a pass grade, an incomplete or no-pass grade was given depending on the amount of work needed for satisfactory completion of the course and the particular circumstances of the individual case. This program began with an enrollment of fifty-one students in its first year (1976-77) and gained an enrollment of 223 students in 1980. Twelve class sections were offered by the 1980-81 academic year to meet this increased demand.

Student Population

The student population at the University of the Pacific represented a broad range of cultural and racial backgrounds. The majority of the students were English speaking United States citizens. Foreign students and students who were native speakers of other languages were present on the campus and they were included in the reading

courses. No attempt was made to screen any student from the study on the basis of background. Only students who were unable to pass an English proficiency examination were excluded from the class and, therefore, were not a part of the experimental group. Students entering the course did so on a voluntary basis. While the majority of students were freshmen, upper classmen could also be found on the class roles. Since student advisers used Raygor Reading Test scores in advising students to take the reading course, the population in the experimental group represented many of those with less sophisticated reading skills, particularly those with slower reading rates as demonstrated in Table 1 and Figure 1.

Table 1

UOP Freshmen Reading Rates*

	1977	1978	1979	1980
Mean average reading rate for all entering Freshmen	212	207	201	200
Mean average reading rate for experimental group	190	155	196	165
Mean average reading rate for control group	186	193	203	201

*Average reading rates were based on the Raygor Reading Test Scores which average the easy and hard reading rates for this score.

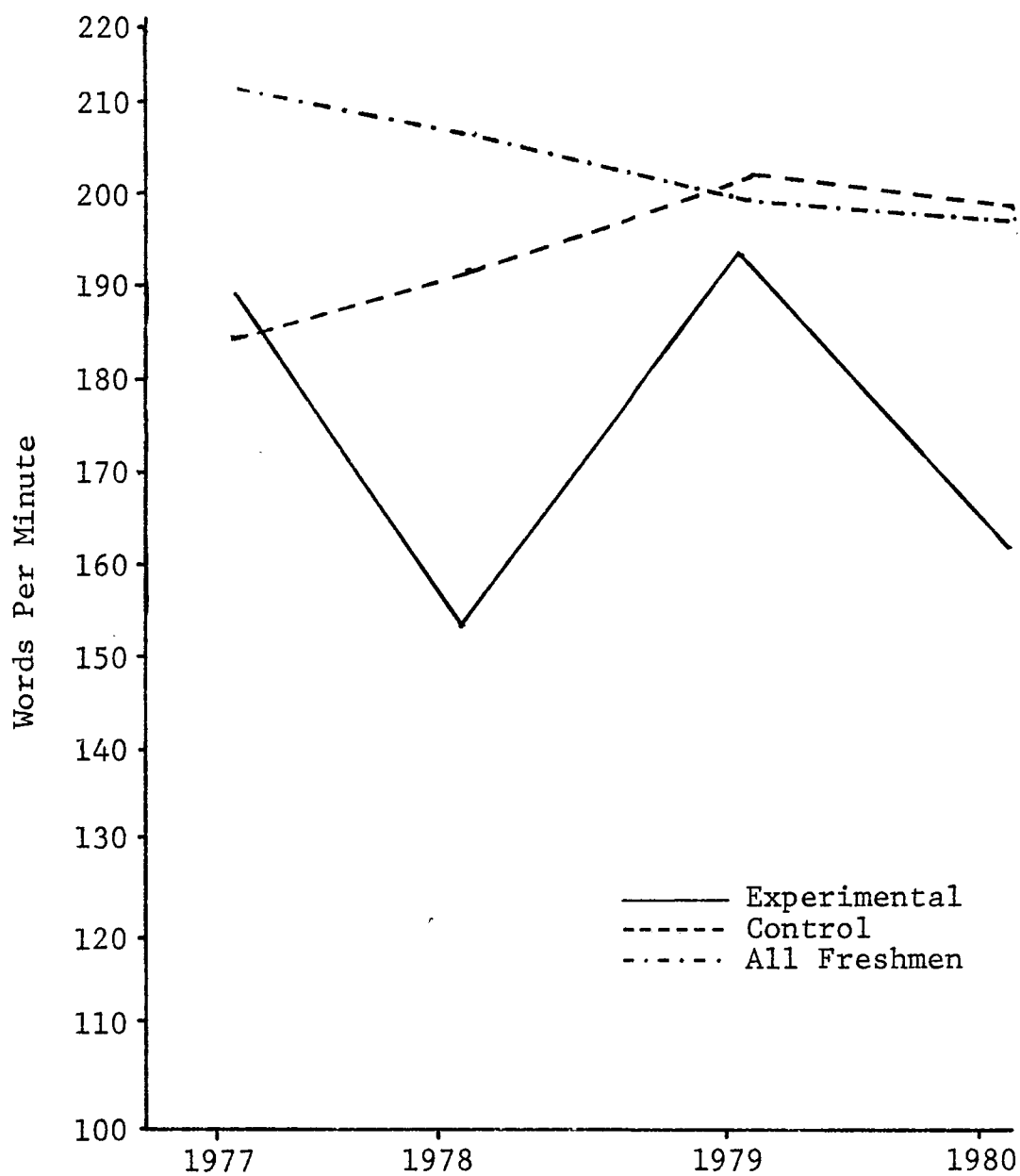


Figure 1

Average Beginning Reading Rates for
Entering Freshmen, Control and
Experimental Groups

Instructors

During the academic period which was studied, the same director of the program, Sanders, remained in the Academic Skills Center and taught part of the reading courses on an on-going basis and directed the Center. Other sections of the reading course were taught by graduate assistants from the doctorate program in education at the University. One graduate assistant worked with Sanders per semester until 1980 when the instructional positions were increased to two assistants. These graduate assistants varied in their experience in teaching, but all had had teaching experience. The variety of instructors represented should have negated the possibility that one instructor had special charisma or competence, while the stability of the program director provided the study with solidity and uniformity of content and approach.

Lesson Content

Lesson content was varied in nature with emphasis on developing a flexible reading rate, increasing comprehension and developing critical reading skills. The course began with evaluation of reading rate and comprehension, then proceeded immediately to rate-building techniques.

Included in the rate-building portion were reading for main ideas, and skimming and scanning techniques. Practice of techniques was included in the group sessions. While maintaining rate-building practices, students were instructed

in study and comprehension techniques. These included SQ3R (survey, question, read, recite, review); prereading; analyzing the author's structure and organization; adjustment of rate to purpose for reading; and application of these skills to the sciences. Critical reading lessons included consideration of the author's purpose, reliability, assumptions and implications, as well as close attention to intent, tone, arguments and biases of the author. Each step into new areas of skills was accompanied with constant review and practice of skills already learned. (See Appendix A, page 88 for sample lessons.)

Between lessons, laboratory assignments were given for further practice of techniques taught during the preceding lesson. Also, materials were available for other individualized work during the laboratory time for those students with special needs. An instructor was available during the laboratory periods to answer questions students might have. (See Appendix B, page 91, for sample laboratory sheet.)

Individual Interviews

Individual interviews or conferences were scheduled a minimum of at least three times: a beginning interview, a mid-term interview, and a final interview. The beginning interview was used to acquaint the student with the program, answer individual questions and to gain information pertinent to individualization needs. (See Appendix C, page 92, for

questionnaire brought by the student to the first interview.) Extra sessions were scheduled if further individualization was indicated at that time. The mid-term interview was used to assess progress and to be certain any individual needs were being met. Summary of student progress and a mutual evaluation of the program were the primary purposes of the final interview. These interviews were found to be of primary importance in the research on which the program was based.

Individualization

Individualization was planned during the individual interviews and at times included further diagnostic testing. Other techniques, methods and materials were selected if needed for the individual. This was followed by close monitoring of the student's progress which allowed for adjustments in the program as were needed by the student.

Materials

A textbook was used in the course as well as supplementary reading instruction books, reading instruments and materials from various content areas. The text, Increasing Reading Efficiency, 4th edition,¹ by Miller, was used in class and for part of the laboratory work. Materials available for laboratory work included Skimming and Scanning, by Maxwell;²

¹Lyle L. Miller, Increasing Reading Efficiency, fourth edition. (New York: Holt, Rinehart & Winston, 1977).

²Martha Maxwell, Skimming & Scanning (New York: McGraw-Hill, 1969).

the controlled reader used with the Educational Development Laboratory tapes, GH (7th and 8th grade level) through MN (college level), (MN was normally used for most students.); Comprehension Skills tapes and booklet MN, Jamestown Series; Robinson, Effective Study;³ Jamestown Publishers, Reading in the Content Fields; as well as the tachistoscope with Educational Development Laboratory tapes. Other materials included the students' textbooks and paperback books. Different materials were used as needed to meet individualization requirements. (See Appendix D, page 93.)

Procedures

Completion of this study was performed in three phases. (1) Samples were selected for the experimental and control groups. (2) Data were collected. (3) Statistical procedures were computed for evaluation of the data. A description of these procedures follows.

Control and Experimental Groups

Experimental groups for this investigation were chosen through use of random sampling of the past class rolls. Only students completing the course who were freshmen were assigned a number. Numbers then were chosen by random sampling. Twenty-eight students were chosen from

³Francis Robinson, Effective Study (New York: Harper & Row, 1941).

each fall semester enrollment including the years of 1977 through 1980 for a total of one-hundred-twelve students, since there was a possibility of information being missing at a later point of data gathering and a minimum of twenty-five students per year was desired. Students for whom data were incomplete and those with widely deviant scores, outstanders, were deleted from the experimental group. Because some data were missing, the final student count was ninety-seven which was broken down as follows: 1977, twenty-six students; 1978, twenty-two students; 1979, twenty-five students; and 1980, twenty-four students.

Control groups were chosen from students who were freshmen simultaneously with the experimental students but did not enroll in the Reading Efficiency Development course. Any student who had enrolled in the course was deleted as a possible control group member regardless of completion of the course. Lists provided by the Registrar's Office made this possible. Raygor test scores were then used for matching the individual experimental group members. This was done by using lists of students which were available in the Office of Student Advising. The Paragraph Comprehension score from the reading test was chosen to best represent reading skill. The total of the Study Skill scores (excluding the Notetaking score) was used to represent a control for motivational factors. These subscores related to General Study Habits, Relationships with Teachers and Courses, Motivation, Organization of Effort, Concentration, and

Emotional Problems, all of which reflect attitudinal factors and are related to motivation. In matching these scores, if a perfect match was not available, the reading score was matched exactly and the Study Skills score closest to the experimental score was chosen. Upon completion of the use of this method, a test was run to check the totals of both groups and found to be within a three point range per year. The mean average reading rate of the groups was not matched (see Table 1, page 46). The experimental group average reading rate mean was 178 words per minute, while the control group reading rate mean was less than twenty words per minute more, 196 words per minute. However, the groups were well matched when entering college as regards reading comprehension and study skills (attitudinal and motivational aspects). The group members were further matched in that all members were entering freshmen during the fall semester of the same year as their counterpart.

Data Collection

The Academic Skills Center had kept records maintained since it opened. These records were made available to this researcher and provided information about the group member's sex, year in school, and amount of reading index gain for the semester. A hand search of the records was used to identify the data needed.

Students who were enrolled without an interruption during the regular academic year were identified through a

hand search of the University Registrar's Office records. The transcripts of those students meeting the above requirement were provided by the Registrar's Office. The number of units accumulated by the end of the second spring semester of the year following the reading instruction course (the end of the sophomore year), were calculated. The G.P.A. then was calculated for courses which were given letter grades. These procedures were done for each group member retained in both the control and experimental groups; however, no attempt was made to calculate units or G.P.A. for students not retained for two years.

Statistical Procedures

All data gathered, excluding student names which were replaced with numbers, were entered in the computer to allow statistical evaluation through the use of the SPSS (Statistical Package for the Social Sciences).⁴ Each hypothesis was tested through computer analysis using the appropriate statistical procedures. The procedures used to assess differences follow for each hypothesis:

H₁. There is no significant difference in the cumulative G.P.A. between the control and the experimental group at the end of the two year period.

A two-tailed ANOVA was computed with alpha level set

⁴ Norman H. Nie, SPSS Statistical Package for the Social Sciences, second ed. (New York: McGraw-Hill Book Co., 1975).

at the .05 level to find the statistical significance of difference in cumulative G.P.A. between the two groups and for each year. Further assessment was calculated comparing the mean G.P.A. for each group for each year separately.

H₂. There is no significant difference in the number of units completed between the control and the experimental group at the end of the two year period.

A two-tailed ANOVA was calculated with the alpha level again set at the .05 level to find the statistical significance of difference in number of units completed between the two groups. Again a by-year and group comparison was made.

H₃. There is no significant difference in the rate of college retention between the two groups at the end of the two year period.

An ANOVA was computed to establish the difference in the retention rate at the university between the two groups and a comparison of group means was done to establish any differences by year. To further test these first three hypotheses, a breakdown was done to get tables which related G.P.A., units completed and retention by group by year; and a Correlation Coefficient analysis was calculated among group, number of units, G.P.A. and retention.

H₄. There is no correlation between attitudes and G.P.A., units completed, or retention rate within the experimental group.

A Correlation Coefficient procedure correlated attitudes with G.P.A., number of units completed and retention at the University within the experimental group.

H₅. There is no correlation between sex and G.P.A. units completed or retention within the experimental group.

A Point biserial Correlation Coefficient was completed to establish the correlation between sex and G.P.A., and number of units completed within the experimental group.

H₆. There is no correlation between reading gain, units completed or retention within the experimental group.

Correlations among reading gain, units completed and retention at the University were checked by use of the Point Biserial Correlation Coefficient.

Summary

In this chapter the researcher has (1) identified and described the program which was studied; (2) described the method of determining the experimental and the control group members and; (3) related the statistical procedures used to analyze the data. In describing the program, its history was noted along with the population served, the instructors, course content, interviews, individualization and the materials used in the reading course. Careful

description of the procedures used to determine the experimental and control group members was provided. The specific statistical procedures employed to analyze the data completed the chapter. In Chapter 4 the results of the investigation will be given,

Chapter 4

PRESENTATION OF DATA

The purpose of this study was to evaluate outcomes of a college reading program, the Reading Efficiency Development Course at the University of the Pacific. For this study, samples from four academic years, 1977, 1978, 1979, and 1980, representing students who had enrolled in the course in the fall of their Freshman year and a matching control group for each year were selected. A number of statistical procedures were then conducted to evaluate hypotheses concerning academic progress evidenced at the end of two academic years through examination of (1) G.P.A., (2) units completed at that time, and (3) retention at the University. Further tests were done to evaluate within-group differences regarding these academic outcomes to establish the types of students who benefited most from college reading instruction.

This chapter is organized in the following sections: (1) between-group analyses of outcomes, (2) within-group analyses of outcomes, (3) summary.

BETWEEN-GROUP ANALYSES

The first three hypotheses were based on questions of differences in outcomes between the experimental and the control group. These assessments were designed to identify the results of completing a reading efficiency course as

measured by G.P.A., units completed and retention in the University of the Pacific.

Hypothesis 1

H₁. There is no difference in the cumulative G.P.A. between the control and the experimental group at the end of the two year period.

The analysis of variance (ANOVA) procedures were utilized to determine the significance of differences between the experimental and control groups with respect to G.P.A. This analysis yielded an F-score of F = 1.16 as shown in Table 2. With the two-tailed level of significance set at .05, the critical F-value was F = 3.89. The obtained ratio did not allow a rejection of hypothesis 1; the experimental and control groups did not differ significantly with respect to G.P.A. after two years.

Hypothesis 2

H₂. There is no difference in the number of units completed between the control and the experimental group at the end of the two year period.

The number of units earned during the two year period by group was submitted to an ANOVA. As shown in Table 3, the F-ratio produced was F = 1.40 as opposed to the critical F = 3.89. The second hypothesis cannot be rejected; there was no significant difference between the experimental and control groups regarding number of units earned at the end of two years.

Table 2
Analysis of Variance of GPA Data Between
Experimental and Control Group by Year

Source of Variation	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Main Effects	1.35	4	.34	.18	.99
Group	1.03	1	1.03	.55	.46
Year	.32	3	0.11	.06	.98
2-Way Interactions					
Group x Year	6.58	3	2.195	1.16	.38
Explained	7.94	7	1.13	.60	.76
Residual	352.18	186	1.89		
Total	360.12	193	1.87		

Table 3

Analysis of Variance of Units Earned Between
Experimental and Control Group at the End
of Two Years by Year

Source of Variation	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Main Effects	908.18	4	227.05	.24	.91
Group	460.83	1	460.83	.50	.48
Year	447.35	3	149.12	.16	.92
2-Way Interactions					
Group x Year	3893.97	3	1297.99	1.40	.24
Explained	4802.16	7	686.02	.74	.64
Residual	172242.26	186	926.03		
Total	177044.42	193	917.33		

Hypothesis 3

H₃. There is no difference in the rate of college retention between the two groups at the end of the two year period.

An ANOVA was computed to assess differences in retention in the two groups. Values are given in Table 4. The alpha level of .05 was needed for significance, however $p = .17$ even with the two-way interaction of group by year. The hypothesis was not rejected.

A Pearson's Correlation Coefficient further verified the earlier statistical procedures when it was used to check correlations between group membership to G.P.A., units earned and retention. Table 5 gives these values. In no case can the first three hypotheses be rejected.

A final analysis of these hypotheses was performed by using the SPSS Breakdown procedure. Both the experimental and the control groups were categorized by the year they entered the University as freshmen. Tables 6 to 8 and Figures 2 to 4 were used to identify the subgroups by year in reference to each of the variables: G.P.A., units completed and retention at the University. The patterns of these graphs, with the exception of retention, were similar to and corresponded with the graph shown in Figure 1 describing average reading rates upon entering the University.

To eliminate the possibility that beginning reading comprehension was not related to the factors of academic achievement, a Pearson's Correlation Coefficient was

Table 4

Analysis of Variance of Retention Between
Experimental and Control Groups at the
End of Two Years by Year of Entry

Source of Variation	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Main Effects	.28	4	.07	.34	.85
Group	.19	1	.19	.90	.34
Year	.10	3	.03	.16	.92
2-Way Interactions					
Group x Year	1.04	3	.35	1.68	.17
Explained	1.33	7	.19	.92	.49
Residual	38.51	186	.21		
Total	39.83	193	.21		

Table 5

Correlation Coefficients Relating Group
Membership (Experimental or Control)
to GPA, Retention and Units Earned

Variable	GPA	Retention	Units
Group	<u>r</u> = .04	<u>r</u> = .07	<u>r</u> = .09
	<u>n</u> = 138	<u>n</u> = 194	<u>n</u> = 138
	<u>p</u> = 0.67	<u>p</u> = 0.34	<u>p</u> = 0.27

Table 6
Experimental and Control Groups Categorized
by Year in Regard to GPA

Variable		Mean	<u>SD</u>	<u>n</u>
For Entire Population		2.82	0.56	138
Year	1977	2.97	0.51	36
	Experimental	3.00	0.58	16
	Control	2.94	0.46	20
Year	1978	2.77	0.64	31
	Experimental	2.73	0.74	18
	Control	2.82	0.49	13
Year	1979	2.83	0.61	35
	Experimental	2.86	0.58	18
	Control	2.80	0.67	17
Year	1980	2.71	0.44	36
	Experimental	2.66	0.47	20
	Control	2.78	0.41	16

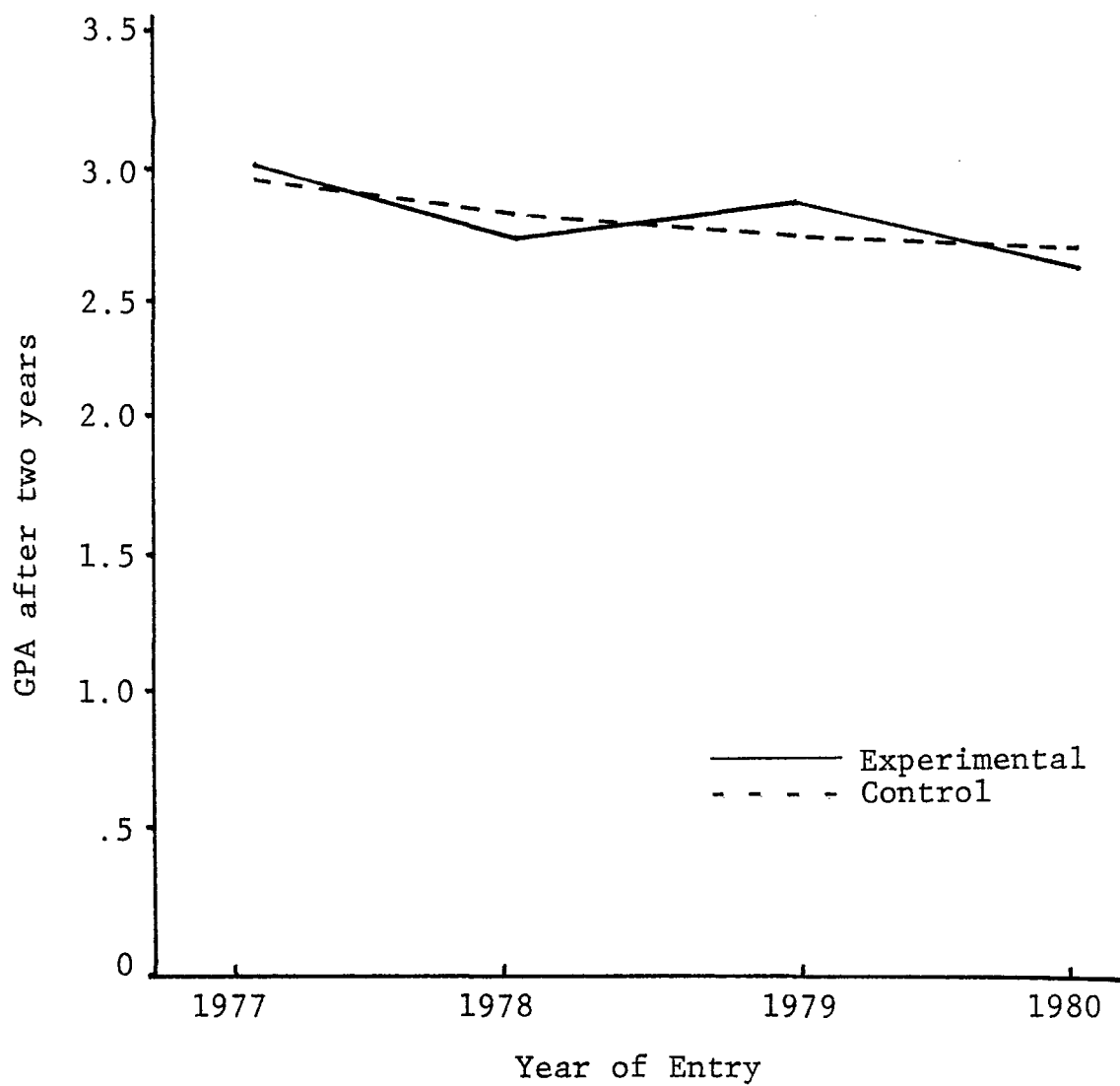


Figure 2

GPA Averaged After Two Years for Experimental
and Control Groups Categorized by Year
of Entrance

Table 7
Experimental and Control Groups Categorized
by Year in Regard to Retention

Variable		Mean	<u>SD</u>	<u>n</u>
For Entire Population		1.71	.45	194
Year	1977	1.69	.47	52
	Experimental	1.62	.50	26
	Control	1.77	.43	26
Year	1978	1.70	.46	44
	Experimental	1.82	.39	22
	Control	1.59	.50	22
Year	1979	1.70	.46	50
	Experimental	1.72	.46	25
	Control	1.74	.48	25
Year	1980	1.75	.44	48
	Experimental	1.83	.38	24
	Control	1.87	.48	24

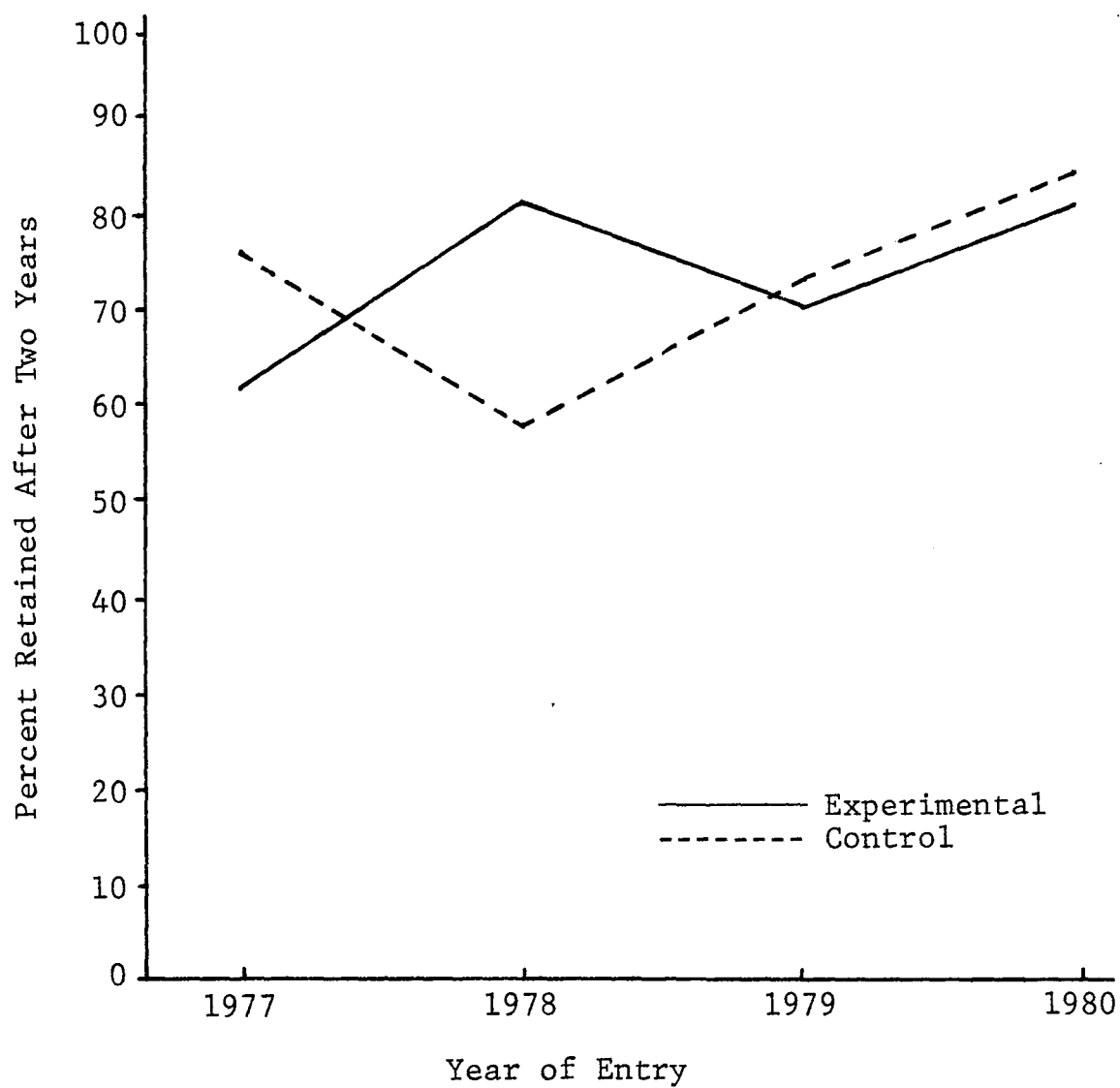


Figure 3

Retention Rates Averaged After Two Years for
Experimental and Control Groups Categorized
by Year of Entrance

Table 8
Experimental and Control Groups Categorized
by Year in Regard to Number of Units Earned

Variable		Mean	<u>SD</u>	<u>n</u>
For Entire Population		65.34	7.13	138
Year	1977	68.92	4.37	36
	Experimental	69.19	3.76	16
	Control	68.70	4.89	20
Year	1978	63.58	8.95	31
	Experimental	62.44	10.48	18
	Control	65.15	6.34	13
Year	1979	64.34	7.76	35
	Experimental	63.94	7.69	18
	Control	64.76	8.06	17
Year	1980	64.25	5.90	36
	Experimental	63.80	5.39	20
	Control	64.81	6.62	16

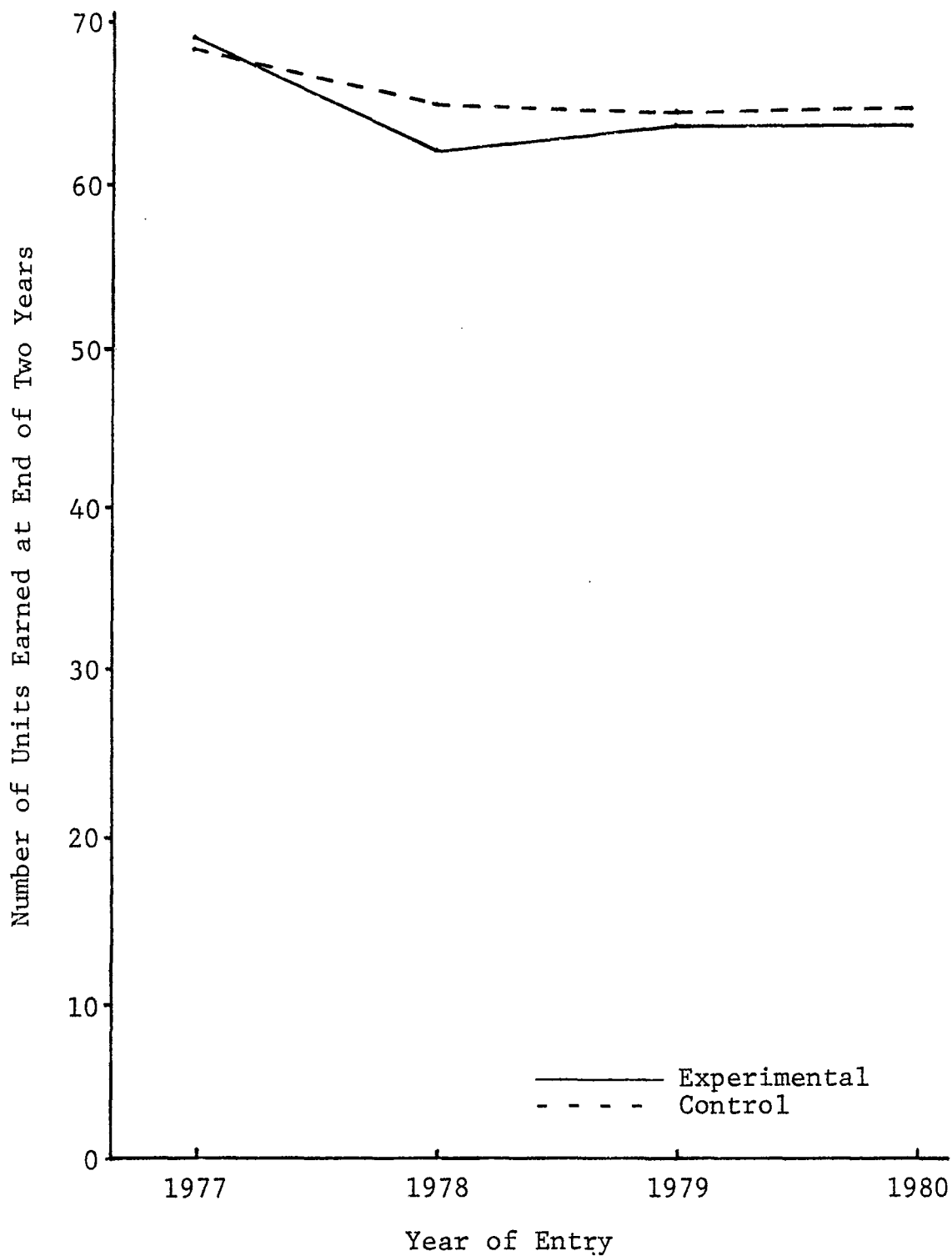


Figure 4
Number of Units Earned After Two Years by
Experimental and Control Groups
Categorized by Year of Entrance

computed. A relationship between beginning reading comprehension and number of units completed yielded a $r = .36$, $p = .002$. G.P.A. correlated to beginning reading comprehension with $r = .26$, $p = .03$. Both of these reflect a significant relationship ($p < .05$). Retention failed to show a significant relationship to beginning reading comprehension. These findings shown in Table 9 indicate a significant relationship between beginning reading comprehension and the number of units earned and G.P.A., while retention was not significantly related. These findings verify the use of reading comprehension as a controlled variable for matching pairs for groups.

A study of figures 1 through 4 lends further insight concerning factors which appear to significantly contribute to academic success of the student. The tables showing beginning reading rate, G.P.A. after two years and units earned follow the same pattern. Retention, however, reverses this pattern. Beginning reading rate appears to have more influence on academic success than does reading instruction at this early adult age.

WITHIN-GROUP ANALYSES

Analyses of differences existing within the experimental group were calculated to establish information concerning individual differences. These procedures were completed on variables such as school related attitudes as measured by the Raygor Study Skills Inventory, sex and the

Table 9

Correlation Coefficients Showing the Relationship
Between Beginning Reading and GPA, Retention in
UOP, and Units Earned During a Two Year Period

Variable	Units	GPA	Retention
Reading Comprehension	$\underline{r} = .36$	$\underline{r} = .26$	$\underline{r} = .16$
	$\underline{n} = 72$	$\underline{n} = 72$	$\underline{n} = 197$
	$\underline{p} = .002$	$\underline{p} = .03$	$\underline{p} = .11$

increase in reading Index at the completion of the reading development course. Hypotheses 4 through 6 were directed toward these within group analyses.

Hypothesis 4

- H₄. There is no correlation between school related attitudes and G.P.A., units completed, or retention rate within the experimental group.

The correlation of attitudes and study skills as measured by the Raygor Study Skills Test with number of units completed, G.P.A., and retention at the University following a two year period was assessed through the use of the Pearson's Correlation Coefficient. The following values were obtained: attitude with number of units completed, $r = .3185$, $p = .006$, attitude with G.P.A., $r = .11$, $p = .375$; and attitudes with retention, $r = .19$, $p = .06$. (See Table 10.) No significant coefficients were noted in correlation with G.P.A. or with retention. A significant correlation between attitudes and number of units completed was detected. Hypothesis 4 cannot be rejected in that there was no significant correlation between attitudes and G.P.A. or retention, however there was a significant correlation between attitudes and number of units completed.

Hypothesis 5

- H₅. There is no correlation between sex, and G.P.A., units completed or retention within the experimental group.

Table 10
Correlation Coefficients of Attitudes as Related
to GPA, Units Completed and Retention at
UOP After a Two Year Period

	Units	GPA	Retention
School Related Attitudes	$\underline{r} = .32$	$\underline{r} = .11$	$\underline{r} = .19$
	$\underline{n} = 72$	$\underline{n} = 72$	$\underline{n} = 97$
	$\underline{p} = .006$	$\underline{p} = .37$	$\underline{p} = .06$
<u>Variables</u>	<u>Cases</u>	<u>Mean</u>	<u>SD</u>
Attitudes	97	26.44	6.44
Units	72	64.69	7.58
GPA	72	2.80	.60
Retention	97	1.26	.44

Sex was not found to be significantly related to G.P.A., units completed, or retention as shown in Table 11.

Table 11
Correlation Coefficients Showing the Experimental
Group Relationship Between Sex and GPA,
Units Completed, and Retention at
the University of the Pacific
Following a Two Year Period

	Units	GPA	Retention
Sex	$\underline{r} = .18$	$\underline{r} = .14$	$\underline{r} = .09$
	$\underline{n} = 72$	$\underline{n} = 72$	$\underline{n} = 97$
	$\underline{p} = .14$	$\underline{p} = .24$	$\underline{p} = .40$

Hypothesis 6

H₆. There is no correlation between reading index gain G.P.A., units completed or retention within the experimental group.

Gain in index reading scores measured at the end of the Reading Efficiency Development course were not found to be related to units completed, G.P.A., or retention at the University of the Pacific. (See Table 12.) Hypothesis 6 could not be rejected.

SUMMARY

In this chapter the results of the various statistical measures have been given. Hypotheses 1 through 3, the between group analyses could not be rejected. The

Table 12

Correlation Coefficients Showing the Reading Index
 Gain at the End of the Reading Efficiency
 Development Course Relationship to Units
 Completed, GPA and Retention

	Units	GPA	Retention
Gain	$\underline{r} = -.19$	$\underline{r} = -.18$	$\underline{r} = .67$
	$\underline{n} = 71$	$\underline{n} = 71$	$\underline{n} = 96$
	$\underline{p} = .11$	$\underline{p} = -.14$	$\underline{p} = .52$

three within-group hypotheses yielded little of a significant nature. A slight relationship between school related attitudes and number of units completed at the end of a two year period was found. No other relationships within the experimental group were found. This lack of significant outcomes strongly suggests that reading instruction did not modify behavior as evidenced by those academic outcomes which were measured. In Chapter 5, these results will be discussed and recommendations for further studies will be given.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

This study was undertaken to establish the academic benefits to college freshman students derived from completing a developmental Reading Efficiency course at the University of the Pacific. This particular course provided the researcher with a model since it followed the findings of Sander's research, "A Meta-Analysis: The Relationship of Program Content and Operation Factors to Measured Effectiveness of College Reading-Study Programs."¹ Because the initial aim of college reading courses was to aid students in achieving academic success, certain academic factors were used as the criteria for evaluation of benefits. At the end of two years, data were collected for the sample populations regarding (1) grades as reflected in G.P.A., (2) number of units successfully completed, and (3) the student's continuous retention at the University of the Pacific. It was anticipated that evaluation of these data would be helpful to administrators in making determinations concerning the allocation of financial resources for program improvement or modification.

¹Victoria Sanders, loc. cit.

PROCEDURES

The procedures for this study were completed in three phases: (1) The experimental and control student groups were selected, (2) Data were collected, and (3) Statistical measures were applied to these data. A review of these procedural phases follows.

The Sample

The experimental sample was composed of entering freshman students at the University of the Pacific who completed the Reading Efficiency Development course during the fall of their Freshman year. A random sample of twenty-eight was chosen for each of four academic years from 1977 through 1980. No deletions were made for reasons other than failure to meet the above criteria or for lack of available data.

The control group was also chosen from the entering freshmen from each respective year. Students who had enrolled in the reading course at any time were deleted as possible samples. Control group members were matched on the basis of Raygor Reading Comprehension Test scores and Study Skills Inventory scores. Study Skills Inventory scores reflected student skills, motivation and attitudes which also gave a control for attitudinal factors.

Extreme care was taken by the researcher in the matching procedure to avoid weakening the study. Students who had taken the reading course at any time during their

first two years at the University were excluded from the control group, and only students in their first semester enrolled in the reading course were included in the experimental group. Those for whom data were missing were deleted with their match in the corresponding group. Those with outstanding scores which deviated widely from the norm were also eliminated. This process reduced the group from a possible 112 pairs to ninety-seven pairs.

Data Collection

The necessary data were made available by the cooperation of the Director of the Academic Skills Center, the Office of Student Advising and the Office of the Registrar. The Academic Skills Center provided lists for samples, class standing, sex and reading index gain at the completion of the course. Student Advising provided the Raygor scores needed for matching pairs for the control group. These were needed to control for beginning reading ability and attitudinal factors. The Office of the Registrar furnished information concerning retention, units completed and G.P.A.

The Study-Statistical Measures

The study included utilization of statistical measures designed to evaluate each of the six (6) hypotheses. Further statistical procedures were completed to cross check findings and to establish other possible sources of academic outcomes. These procedures were completed through use of SPSS computer programs performing analyses of

variance and correlational procedures.

FINDINGS

This study utilized several variables to investigate differences in academic performance. These variables were G.P.A. for the first two years, number of units successfully completed within two academic years, and continuous enrollment (retention), at the University of the Pacific. The course, Reading Efficiency Development, was examined in relationship with these variables. Further investigation regarded students who completed the reading course concerning school related attitudes, sex of the student and the amount of reading index gain at the end of the reading course as related to the three academic variables. Consideration of each of the three academic variables follows:

G.P.A.

The single factor statistically correlated to G.P.A. was found to be reading comprehension, one of the measures used to control for matching. The graphs comparing beginning reading rate and G.P.A. strongly suggested a positive correlation between them. However, no significant difference in G.P.A. was evidenced resulting from completion of the Reading Efficiency Development course. Neither were the sex of the student nor school related attitudes found to be related factors. Further, the students who

made greater reading index gains in words per minute at the end of the Reading course did not show significantly more academic achievement than those with lesser gains.

Units Completed

Units earned during the two academic years did not differ between groups, however, a within-group analysis indicated the relationship of units completed with both of the scores used for matching: (1) reading comprehension and (2) school related attitudes. Beginning reading rate also followed the same graphed pattern as number of units earned. This confirmed the effectiveness in matching the experimental and control groups and further increased the evidence that the reading course did not substantially alter reading behavior.

Retention

Continuous enrollment at the University of the Pacific was not found to be related to any of the variables, nor was it related to the controls for matching. The only hint of a possible correlation was evident when comparing retention with the beginning reading rate, G.P.A. at the end of two years and units earned during a two year period. While the others followed a similar pattern, the graphed pattern for retention appeared to be reversed. The explanation for this is not readily apparent. Regardless, completion of the reading course was not found to be a significant factor.

DISCUSSION

Factors in this study found to contribute to academic success were beginning scores from the Raygor tests and inventories. Beginning reading comprehension scores related to both G.P.A. and number of units earned at the end of two years. This indicated the importance of early reading development and confirmed the need for emphasis on reading comprehension. Further, it substantiated Thomas' study of military test scores which reflected poor inferential reading comprehension.² However, completion of the Reading Efficiency Course did not increase academic success on those variables which were measured. Thus, while beginning reading comprehension was related to academic achievement as evidenced in G.P.A. and units earned, means of meeting the need for increased skills largely were left unmet.

Perhaps another factor, average entering reading rate can offer further insight. Average entering reading rate followed the same graphed pattern as the academic variables of G.P.A. and units earned at the end of the two year period. However, increased reading rate failed to show a correlation to these academic indicators. Several possible explanations for this exist.

First, reading behavior may not have been changed.

²Charles L. Thomas, loc. cit.

Gains in rate may have been lost quickly due to a lack of continued practice and/or due to rejection. Rejection of learning can be due to practice of pedagogy rather than androgogy since the adult perceives weaknesses or criticism as a rejection of himself. This in turn causes rejection of instruction.

Secondly, physical changes in neurological patterns which accompany adulthood may require different methods of instruction. An androgogical approach may have been lacking or may have been inadequately developed which met the changed needs of adults.

Remedial techniques may have been indicated. While the course design was developmental, the reading rates of the experimental group at the time of entry fell consistently below the class averages. This indicated that at least part of the experimental group were remedial readers. (Further testing of students would be required to establish the extent of remedial students enrolled in the developmental course.) In addition, remedial students may require a much longer period of instruction and support as was suggested by Usova's research.³

Finally, since students who showed the greatest increase in reading rate did no better than those students attaining little or no increase in rate, emphasis on rate may be in error. Carver's findings concerning an optimum

³Usova, loc. cit.

reading rate of about 300 w.p.m. indicated that this rate produced the highest level of reading comprehension.⁴ This could be important in establishing an appropriate means of increasing comprehension and in spending instructional time in a more productive manner. And since reading comprehension was shown to be important, and increased reading rate did not produce measurable benefits, traditional thinking concerning the need for variable reading rates may need serious reevaluation.

Throughout the study, retention of the student at the University of the Pacific was not significantly related to any of the other factors. Conceivably, if it had been possible to determine whether students had enrolled in other colleges, some correlations may have been indicated. However such findings go beyond the scope of this study.

The lack of significant findings and the conflicting research evidenced in the literature appear to be the result of a field of study still lacking in solid findings. If findings of this study can be duplicated in another setting, generalizability of these findings can be verified and the scene set for dropping ineffective instructional approaches and looking at new alternatives for reading instruction. Reading courses tied to content area courses may be an appropriate area for pursuit. Attention to research findings and establishing an ongoing program

⁴Carver, loc. cit.

evaluation may be a necessary and valuable avenue of pursuit for the college reading instructors.

RECOMMENDATIONS

The findings of this study indicated that the developmental reading course at the University of the Pacific did not significantly alter G.P.A., number of units earned or retention. Since reading instruction at the post-secondary level is a relatively recent phenomena, it is hardly surprising that further modifications and adaptations were indicated. In view of the findings of this study, reading specialists need to continue to design, develop and research new methodology; therefore the following recommendations are presented.

Recommendations for Instructional Development

This study indicated that the student population did not substantially benefit from conventional reading instruction; therefore, the following recommendations are suggested.

1. Do not place remedial students in developmental courses.
2. Design a more intensive separate program for remedial students.
3. Implement an androgogical approach to instruction at the post-secondary level.
4. Emphasize reading comprehension while decreasing

emphasis on reading rate.

5. Tie reading coursework to a content course as an approach to reading instruction.
6. Continue to reflect recent research in reading coursework.
7. Formulate a continuing evaluation plan.

Recommendations for Future Studies

Outcomes of this study suggest certain directions for future studies. This researcher recommends the following:

1. Replicate this study in another university to test generalizability.
2. Replicate this study using only students in the average range of Raygor Reading Comprehension and Study Skills Inventory scores for the experimental group to test the effect of the developmental course on an entirely developmental group.
3. Design a study to test the applicability of an optimum reading rate for post-secondary students.
4. Design a similar study to evaluate the effectiveness of an androgogical approach.

APPENDICES

APPENDIX A

WEEK 1Group Session #2: Introduction to Perceptual Accuracy

- PURPOSE: (1) To develop an awareness of the various types of reading we individually may do.
 (2) To develop skill of recognizing groups of words rapidly.
 (3) To introduce the concept of reading for ideas.

1. Read Miller pp. 15-16, Kinds of Reading.
 (A) IDEAS, (B) FACTS or possibly (C) ENTERTAINMENT and/or (D) Aesthetic appreciation of style, content or philosophy.
 The first five weeks of this course will concentrate on A, B, C, while during weeks 6, 7, 8, 9 we will lightly approach D.
 Read quickly, look for MAIN IDEAS.
 Emphasize FAST READING.
2. Read Miller p. 25, Using this Workbook [SEQUENCE]
 Discuss the development of skills from WORD recognition
 _____> WORD MEANING_____> PHRASE MEANING_____> SENTENCE
 MEANING_____> IDEA READING; Series I - V.
3. Do one exercise from Series I, plot results p. 297.
4. Do one exercise from Series III, plot results p. 297.
5. Do one exercise from Series IV, plot results p. 297.
6. Do one exercise from Series V, plot results p. 297.
7. Demonstrate Flash X and Perceptual Accuracy Lessons _____
 to _____ with C.R. instrument.
 Discuss Series II VOCABULARY and its importance!
8. Demonstrate grouping words in your text by dividing words from Miller p. 15-16 into thought groups. Do one or two paragraphs this way.

INDIVIDUAL CONFERENCE: (Counts as Lab #1) Required this week if at all possible!

- Schedule hours T.B.A. (allow 15-20 min. per student) Purpose: to discuss student's present reading behavior, rate from MN #1 and results of MHBSS (if available).
- Review personal goals and expectations of Course.
- Review completed questionnaire.
- Review time commitment and graphs, Miller pp. 297ff.

LAB #2: Worksheet #2

Remind students how to achieve greatest transfer by use of non-fiction book or paperback at conclusion of each lab session.

WEEK 2 - PREVIEWING AND MAIN IDEA READING

- PURPOSE:
- (1) To develop awareness of reading for MAIN IDEA as both a means of rapid reading and of improved comprehension.
 - (2) To demonstrate to students that they are capable of rapid reading and comprehending at the same time.

Group Session #3: Discussion of Reading Myth #1 - "I have to read every word in order to understand."

1. Practice using a paragraph in Miller introductory chapters and cross out "unnecessary words." Does it still make sense?
2. Review sequence from Week 1, Group Session 2.
3. Reading quickly looking for MAIN IDEAS:
 - a. Read Miller p. 115, discuss.
Do one exercise in Series V, plot on p. 298.
 - b. Read Miller p. 157, Exploratory Reading.
Discuss similarities/differences
Do one exercise in Series VI, plot.
4. Introduce PREVIEWING as a study technique.
Read a chapter length passage (est. 6,000 words) from Miller _____, allowing ten minutes only.
Answer comprehension questions, figure rate/comprehension/efficiency and COLLECT STUDENTS' SCORES!
5. Encourage students to apply this technique with their texts and bring samples of texts reading where it was successful and/or unsuccessful.
As with any "new" technique - it will require practice.

WEEK 3 - ACCELERATION TECHNIQUES

- PURPOSE:
- (1) To clarify the concept of reading rapidly for the main idea as a method of seeking organization and structure of any given passage.
 - (2) To consider the value of reading purposefully with maximum concentration the smaller subdivisions within a chapter or unit as an aid to rate and comprehension.

Group Session 5: Reactions to Acceleration

(Reaction paragraphs reviewed by instructor)

1. Discuss with group: Use of C.R. - Accelerator. What was helpful? What was not? Effect on comprehension, on rate?
2. What detracts from your efforts to read quickly and comprehend? List factors, discuss (a) what facilitates development of these skills?; (b) how can you enhance your growth in this area?
3. Present SQ4R as a technique for rapid reading and study in text materials. Use samples.
 -Psychology text example
 -Other
 Discuss.
4. Practice with a text of your choice (in class?)
 -How did you survey the material?
 -Did you develop questions? How? Easy? Difficult?
 -Did you locate sufficient information?
 -Did you recite? How?
 -Could you recall the main idea?
 -Did you review? How? When?

APPENDIX B

Lab Worksheet #2

Name _____ R.E.D. Section _____ Instructor _____

1. Time yourself while reading Miller "How Do We Read?", pp. 9-14.
2. Figure your rate in WORDS PER MINUTE (W.P.M.)
$$\text{W.P.M.} = \text{Length} \div \text{Time}$$

(Example: 5200 words \div 10 minutes = 520 W.P.M.)

Your time _____, Length (see p. 9, Miller) _____, W.P.M. _____
3. Briefly paraphrase the main idea of this article.
4. Study the list of poor reading habits on pp. 11-12. Do any of these apply to you? Discuss briefly.
5. Examine Miller pg. 25 and Sections I, II, III of the book. Time yourself while completing one exercise from each of Series I, II, III.
Record your Efficiency for each exercise.
Record your overall progress on the graph on pg. 297, Miller.

APPENDIX C

Interview Form

READING EFFICIENCY DEVELOPMENT QUESTIONNAIRE*

Name _____ Fr. ____ Soph. ____ Jr. ____ Sr. ____ Grad. ____

Major _____ R.E.D. Section ____ Instructor _____

I. Course Being Taken This Semester:Please list the name and number of course, units,
textbook and instructor.II. Previous Reading-Study Skills Instruction:

Have you had any previous reading/study skills instruction since completing 7th grade?

School: _____ Year _____
Briefly describe (methods, materials used, etc.) _____III. Reading Inventory:

1. What newspapers do you read?
Daily? _____ Only occasionally? _____
2. What magazines do you read?
Weekly: _____ Only occasionally? _____
3. What fiction book have you enjoyed most in the last year?
4. Have you read any non-fiction during the past year? If so, what?
5. Briefly describe your own reading habits and/or attitudes.
6. What do you expect from this Reading Efficiency Development course?
7. Time Commitment: When do you normally anticipate completing your two lab hours weekly?

*To be completed prior to Interview #1

APPENDIX D

SUPPLEMENTARY MATERIALS

The following materials are available for your use in the Academic Skills Center;

Tapes - Listen and Read MN Series

- MN 1 - Listening and Reading
- MN 2 - Meeting New Words
- MN 3 - The Connotative Power of Words
- MN 4 - Using the Dictionary
- MN 5 - Decoding Simple Sentences
- MN 6 - Decoding Complex Sentences
- MN 7 - Finding the Main Idea in a Paragraph
- MN 8 - Noticing Details in a Paragraph
- MN 9 - Following the Author's Organization
- MN 10 - Using Signs and Signals in Reading
- MN 11 - Skimming and Scanning
- MN 12 - Listening and Reading Between the Lines
- MN 13 - Reading Persuasive Material
- MN 14 - Finding the Purpose of an Article
- MN 15 - Finding Viewpoints in Essays
- MN 16 - Reading Newspapers
- MN 17 - Shifting Gears in Reading
- MN 18 - Studying Effectively
- MN 19 - Reading Maps, Graphs, and Charts
- MN 20 - Reading Textbooks
- MN 21 - Reading in Mathematics
- MN 22 - Reading in Science
- MN 23 - Reading in Social Studies
- MN 24 - Using the Library
- MN 25 - Summarizing
- MN 26 - Taking Notes From Lectures
- MN 27 - Taking Notes From Books
- MN 28 - Marking Textbooks
- MN 29 - Recalling Material
- MN 30 - Studying For and Taking Examinations

Jamestown Series - Comprehension Skills - Tape and Booklet

- 1 - Understanding the Main Idea
- 2 - Making a Judgement
- 3 - Understanding Characters
- 4 - Drawing a Conclusion
- 5 - Making an Inference
- 6 - Recognizing Tone
- 7 - Appreciation of Literary Forms
- 8 - Retaining Concepts & Organizing Facts
- 9 - Isolating Details & Recalling Specific Facts

Books

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New York, 1969.

Robinson, Francis, Effective Study, Harper & Row, New York, 1941.

Spargo, Edward, The Now Student, Jamestown Publ. 1977.

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--For additional materials available in the Academic Skills Center, see instructor.

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VITA

GENERAL BACKGROUND:

Fifteen years educational experience. Responsibilities in teaching, curriculum design, teacher inservice, speaking, program developing, supervision and administration. Twelve years secondary level instruction in English, reading, social studies and special education. One year graduate assistantship as instructor of college developmental reading. Acted as instructor of workshops and college courses for teacher training. Two years in a private special education school.

EMPLOYMENT HISTORY:

- 8/81 to present Teacher at Children's Home of Stockton for severely emotionally disturbed adolescents. Program planning, curriculum development, instructor.
- 9/80 - Graduate assistant at University of the Pacific,
7/81 Academic Skills Center; instruction of two developmental reading classes per semester.
- 8/78 - Reading specialist and English Department co-chair
7/80 for Newberg High School, Newberg, Oregon. Program design, curriculum development K-12, teaching, testing, faculty inservice, speaking, supervision, and some administrative duties. Implementation and design of 9-12 reading program. Assisted in junior high school learning disability program design. Chaired committee for writing Language Arts curriculum K-12. Conducted regular faculty inservice program. Taught reading. English department co-chair responsibilities included personnel management and evaluation, budgeting, schedule preparation and curriculum planning and design.
- Win/79 Instructor, George Fox College, Newberg, Oregon.
and Designed and instructed Education course: Teaching
Spr/80 Developmental Reading Writing. Course designed for college junior and senior secondary education majors.
- Summers Instructor for Slingerland Institute. Workshops
1977 designed for elementary and secondary teachers
and instructing language disabled students in all
1978 language related skills. Three workshops; two given

through Seattle Pacific University and Renton School District, one through Central Washington University and Puyallup School District, Puyallup, Washington.

- 9/68 - Teacher, Medford Senior High School, Medford,
6/78 Oregon. Taught English, designed, implemented,
taught and supervised programs for developmental
and remedial reading and social studies. Faculty
inservice. Chaired minimum competency reading
requirements and other committees. Speaker for
International Reading Association state meeting,
Association for Children with Learning Disabilities
state conference and district conference, Hanford
Parents Society, Hanford, CA. and others.

EDUCATIONAL BACKGROUND:

- 9/80- Enrolled in the Ed.D. doctoral program at University
current of the Pacific. Program major; administration.
Minors in research and special education-learning
disabilities.
- 1974 - Post graduate studies in curriculum, reading, and
1980 learning disabilities.
- 1970 - M. S. Southern Oregon State College, Ashland, Oregon.
1972 Major; humanities, literature. Minor; education.
- 1964 - B. S. Southern Oregon State College, Ashland, Oregon.
1968 Major; education. Minors; English and social
science.

CALIFORNIA CERTIFICATION:

Presently have clear credential in Administration,
English, Learning Handicapped.