1979

A meta-analysis: The relationship of program content and operation factors to measured effectiveness of college reading-study programs

Victoria Hunter Sanders

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A META-ANALYSIS: THE RELATIONSHIP OF
PROGRAM CONTENT AND OPERATION FACTORS
TO MEASURED EFFECTIVENESS OF COLLEGE
READING-STUDY PROGRAMS

Presented to
the Graduate Faculty of the
University of the Pacific

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

by
Victoria Hunter Sanders
January 1979
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Dated March 16, 1979
ABSTRACT

A META-ANALYSIS: THE RELATIONSHIP OF PROGRAM CONTENT AND OPERATION FACTORS TO MEASURED EFFECTIVENESS OF COLLEGE READING-STUDY PROGRAMS

Victoria Hunter Sanders
University of the Pacific, 1979

While rapid growth of reading-study programs on college and university campuses across the United States has occurred within the past few decades, this growth has frequently been characterized in professional writing by diversity in methods, materials, content and operational practices. Some uncertainty as to the real value of such programs has also been reported in the literature. The primary problem addressed in this study has been to integrate the findings from the literature to determine if college and university programs generally were beneficial to students participating in them, and to inquire: (1) for what groups such programs were designed, (2) what content and operational factors were identified, and (3) what relationship, if any, existed between content and operation factors and program effects.

Extensive search procedures were utilized to identify
research reports and dissertations written between 1960-1977 relating to the effectiveness of college reading-study programs. Sixty-six studies were located which appeared to meet the research criteria, and utilized adequate to good measures of research control in reporting program results. Twenty-eight of these studies reported their data in useable statistical form, which included reporting mean gains between treatment and comparison groups in one or a combination of the following five variables: changes in Reading Rate, in Comprehension, in Grade Point Average, in Vocabulary and in Study Habits. These twenty-eight studies, which included sixty-six treatment effects, represented 6,046 students enrolled in four year college or university reading-study programs or who served as control groups. These twenty-eight studies comprised the Meta-Analysis. An additional fifteen studies, representing 1,165 students reported program effects in useable quantifiable form but did not use control groups in their investigations. These were not included in the Meta-Analysis but were analysed and reported in order to compare their similarity of findings for hypothesis two.

The Meta-Analysis procedure proposed by Gene Glass as a method of "extracting the message" in a quantity of research studies, utilized "effect size" statistics for each treatment outcome reported. This "effect size" as measured on the outcome variables, was the difference between treated and untreated groups divided by the within group standard deviation. Each effect size thus became an observation and
inferential statistics were applied; in this case, the
dependent t-test was used to determine if the two groups
differed significantly. Each study was examined for the
reported inclusion of (1) six content factors, (2) fifteen
operation factors, and for (3) program effects.

Serious problems of program reporting were noted.
Published reports and dissertations frequently did not
include sufficient information to permit subsequent
investigators to determine program content and operational
practices without making broad, unwarranted assumptions.
This paucity of reporting information was a limitation to
the investigation.

Four hypotheses were tested and the following
conclusions were drawn:

1. College reading-study programs were found to have
statistically significant overall beneficial effects on
students participating in such instruction. On the average
the treated group mean was .94 standard deviations above the
control group mean on the composite of all outcome variables.

2. Treatment groups surpassed untreated groups on four
of five specific variables tested indicating that students
who participated in such instruction made greater gains than
nonparticipants in Reading Rate measures, in Comprehension,
in Grade Point Averages and in Vocabulary measures. Reading
Rate gains exceeded all other variables examined, on the
average moving treated students to the 97th percentile over
control groups without treatment.
3. The majority of studies did not adequately report content and operational factors to allow conclusive findings to be drawn. The number of studies reporting complete program content and operation factors was small, however several significant correlations were obtained with those programs reporting complete data. Programs which reported inclusion of the six content factors appeared to have a slightly greater effectiveness, and program effectiveness favored those studies which included diagnostic and participatory instructional methods. Longer hours of instruction did not appear to influence program effectiveness in any of the program categories examined. Program effectiveness appeared to be related to factors other than length and duration of instruction. Nineteen tentative recommendations were made at the conclusion of the statistical analysis. These recommendations were neither totally supported nor contradicted by the research.
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Chapter 1

INTRODUCTION TO THE PROBLEM

"I have spent my lifetime learning to read."

Goethe at age seventy-one

The challenge of developing college reading and study competencies is not a new educational issue, but it has been accelerated to some degree in the past decade by among other factors, the numerous reports of declining Scholastic Aptitude Test scores for entering freshmen in colleges across the nation. The current status of college reading-study programs can be seen to focus in three areas: (1) recent growth of college reading-study programs, (2) diversity of college reading-study programs and (3) results of diversity.

Recent Growth of College Reading-Study Programs

In California alone 80.2 percent of the state controlled colleges and universities now have reading-study assistance programs and almost all (90.4 percent) became operational since 1963.¹ One recent nation-wide survey found nearly all centers in institutions of higher

education in the United States were less than ten years old.²

In the keynote address of the Western College Reading Association's ninth annual conference, President Patricia Heard shared her pragmatic perspective of the evolving field, saying:

Comprehensive learning assistance programming for college campuses is apparently an idea whose time has come. College administrators increasingly acknowledge learning skills centers as integral parts of the educational process. Obviously, with achievement and acceptance, come obligations.³

Heard credits the Time Magazine report of Stanford's Learning Assistance Center as a public relations coup and milestone for the movement, the acknowledgement in a national news magazine that even Stanford students utilize reading-study assistance programs. Such programs she suggests, fare better administratively and politically when they are relevant to all students on campus, not just to disabled learners.⁴


⁴Ibid., p. 3.
Diversity of College Reading-Study Programs

College reading-study programs appear to be characterized by diversity and complexity of methods, materials, content and operations. Numerous attempts have been made to assess these programs in order to identify effective program components. The following are brief summaries of some of this research.

Lowe reviewed various college and university responses to the need for reading-study competency in his history of the college reading movement from 1915 to 1970. Enright traced the current application of college reading-study programs/learning assistance centers to earlier programs and practices of the nineteen twenties and thirties. The idea that a student could study to become a better student she credited to a study skills guide first published in 1916.

Programs have long attempted to distinguish between remedial and developmental services. Harvard's 1970 report of their reading program underscored the theme that reading skills are skills which all students might master more.

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effectively. The mean verbal score of the Harvard freshmen who accept the opportunity to improve their reading is in the 99th percentile of high school seniors in the United States. Yet accounts of reading-study skills programs for the academically elite were balanced by reports of programs for high-risk, special admission students who would have difficulty remaining in college without special assistance. 8,9,10,11

In 1940 Gladfelter suggested that all students, simply by attending college, increased in reading skills. 12 Since that time the literature on reading-study programs has been preoccupied with a steadily increasing volume of

7 Roderic C. Hodgins, "The Text is the Adversary," Teachers College Record,Vol. 72 (September, 1970), 7-22.

8 Wayne D. Lee, "Who Can Profit Most from Developmental Reading at College-Adult Levels?" College-Adult Reading Instruction, (Newark, Del.: International Reading Association, 1964), pp. 45-58.


reports and experimental studies claiming beneficial effects and improved scholastic success for participating students. These results of reading-study assistance have been measured by a variety of methods. Although these studies are consistently reviewed in the literature, no systematic method of drawing generalizations has been developed and these findings have not been integrated.

Herman reflected the thinking of many when he concluded:

A general description of a college reading improvement program is impossible, primarily because too many differences exist among programs. There is little agreement on the type of student enrollment, length of the program, methods and materials used for instruction, and program evaluation. The only aspect common to all programs is the basic goal of helping the student become better able to handle his academic work.

Other researchers support this position that because such diverse and complex patterns of organization and measures of success exist for college reading-study instruction,

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13 George Schick, "Diversity in College Reading Programs" in College-Adult Reading Instruction, Paul Leedy ed., Perspectives in Reading Series (Newark, Del.: International Reading Association, 1964), pp. 14-17.

they were only able to identify trends.15,16,17

In contrast to this thinking, Fairbanks addressed the question of diversity by examining the content and operational aspects of "successful" programs and was able to identify twenty-eight content factors and seventeen operational factors in sixty well-designed research studies she investigated.18 The following year, she found a "successful tendency" for students who participated in reading-study instruction and a positive effect on overall grade point average in eighty-seven studies.19 Her findings may be considered tentative due to an inability to control certain variables, but they do offer a meaningful integration of instructional components found in "successful" programs.


16 Devirian, Enright, Smith, op. cit., pp. 74-75.


19 Marilyn Fairbanks, "Relationship Between Research Control and Reported Results of College Reading Improvement Programs," Reading: Convention and Inquiry, Twenty-fourth Yearbook, (Clemson, South Carolina: National Reading Conference, Inc., 1975), pp. 80-93.
Results of Diversity

While understanding that programs must meet the need of different population groups, Griese protested this lack of synthesis saying:

Such a situation - which exists in the case of reading - indicates either that the subject lacks a body of principles, and thus is not truly a college subject, or that the body of principles to be taught and expanded has not been adequately identified. ... it appears more reasonable to conclude that, indeed, a majority of the colleges do have courses in reading, but the actual content and instructional procedures exist in a state of limbo.20

This review of the contemporary status of college reading-study programs has indicated: (1) that the college reading-study field has rapidly gained a place on the college and university campus; (2) college reading-study programs appear to be characterized by diversity in method, materials, content and operation; and (3) the lack of integration of content and methodology may inhibit serious acceptance of college level reading-study programs.

II. THE PROBLEM

Statement of the Problem

The primary problem addressed in this study involved integration of the findings of the vast body of reading literature to determine if college and university reading-

study programs generally prove beneficial to those participating in them. Included within this question were the following sub-problems:

1. For what student groups were college reading-study programs designed? Were programs designed to fulfill remedial/corrective, supportive, developmental or other as yet unspecified functions?

2. What program content and program operation factors were identified within program reports?

3. What relationship, if any, exists between these program content and operation factors and reported program effects?

Significance of the Study

This study is important for the following reasons:

1. "Although reading research has been systematically reviewed, abstracted and surveyed for years, integrations of the literature are rare," according to Gene V. Glass in his Presidential address to the American Educational Research Association.21

2. This study will provide a broad perspective to the evolving field beyond that of the status survey which, although valuable in giving needed definition, does not investigate the question of program effectiveness in terms of stated objectives.

3. By identifying components of programs, this study will provide a greater range of options to program developers and practitioners.

4. This study may be of interest to practitioners, administrators, publishers, et al because it identifies elements of college reading-study programs as well as content and operational factors.

Purpose of the Study

It was the purpose of this study to (1) analyze published research reports relating to the effectiveness of college and university reading-study programs, (2) identify program content and operational factors reported in studies which met the research design criteria and (3) integrate these findings into a model(s) for developing and/or assessing college and university level reading-study programs.

PROCEDURES

The following procedural steps were followed in conducting the present study:

Selection

Standard search procedures were used to identify the literature reporting results of college and university reading-study programs published between 1960-1977. The studies included within this extensive review were those which: (a) involved students already enrolled in colleges
or universities in the United States, (b) emphasized reading and/or study skills and (c) reported program results in quantifiable terms.

**Categorization**

Studies were categorized into three groups: those with severe methodological limitations, those with minor methodological limitations and those with well-designed methodology. The bases for this categorization with respect to design adequacy were as follows: (a) the presence or absence of a control group, (b) the method of assuring initially comparable groups and (c) the sample size.

Studies with severe research methodological limitations were eliminated from further consideration following the modification of the Glass technique suggested by Mansfield and Busse.\(^\text{22}\)

**Meta-Analysis**

The meta-analysis procedure was proposed by Glass in his presidential address to the American Educational Research Association, its purpose being to "analyse the

analyses... It has been suggested as a particular need in the reading field where so much research has been undertaken and so little integration has been reported due in part to research design variables and diversity of student populations, program emphases and content and operation factors, all of which limit comparability.

Analysis criteria, content factors: The twenty-eight program content factors identified in the Fairbanks study were used as analysis criteria for content factors in the present study. These factors were as follows:

1. Main idea
2. Analyzing paragraphs
3. Setting up purposes
4. Recognizing inferences
5. Drawing conclusions
6. Differentiating fact and opinion
7. Reading charts and graphs
8. Outlining
9. Sequencing ideas
10. Summarizing, notetaking
11. Context clues
12. Affixes, roots
13. Etymology
14. Dictionary study
15. Notecards, word lists
16. Synonyms, antonyms
17. Word attack
18. Reading in literature
19. Reading in Mathematics
20. Reading in Sciences

23 Glass, op. cit., p. 3.
21. Reading in Social Sciences
22. Flexibility in rate
23. Acceleration
24. Mechanics in rate
25. Listening
26. Using the library
27. Scheduling time
28. Examination preparation

Analysis criteria, operational factors: The seventeen program operational factors also identified in the Fairbanks study were used as criteria for analysis of operational factors. These factors were as follows:

1. Tests used diagnostically
2. Students informed of strengths and weaknesses
3. Student participation in planning
4. Student participation in evaluation
5. Use of time for lecture and demonstration
6. Use of time for discussion
7. Use of time for practice: Group needs
8. Use of time for practice: Individual needs
9. Group size: maximum of twenty
10. Class meetings: two or more per week
11. Length of meeting: maximum 2 hours
12. Duration of program: 6 weeks or more
13. College credit given
14. Program compulsory: all freshmen
15. Program compulsory: "High-risk" freshmen
16. Program voluntary
17. Total hours of instruction:
   a. 0-20, b. 21-30, c. 31-40, d. Over 40

An important aspect of the meta-analysis procedure is the magnitude of the effect. This effect size was the mean difference between the treated and control subjects divided by the standard deviation of the control group.  

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27 Fairbanks, 1974, loc. cit.
28 Smith and Glass, op. cit., p. 753.
The formula for this calculation was:

\[ ES = \frac{(\bar{X}_n - \bar{X}_c)}{S_C} \]

A complete explanation of this research methodology has been included in Chapter 3 of this study.

Model Development

Finally, statistical analyses on well-designed studies were performed to relate program content and operation factors to program effectiveness.

ASSUMPTIONS, LIMITATIONS AND DELIMITATIONS

Assumptions

The current study was based upon several assumptions.

1. The deletion of studies with severe methodological limitations did not distort the general findings relative to research in college reading-study programs.

2. Limiting this study to the time span 1960–1977 was adequate to answer the question of this study.

3. The sample of fifty dissertations accessed was adequate to serve the purposes of this study.

Limitations

1. One limitation of this study was the incomplete reporting of content and operational factors for many published studies.

2. This study did not identify other aspects of college reading-study programs such as staff training,
budget and funding practices, administration influences, departmental affiliations or student motivations. While of interest, these were beyond the scope of this investigation.

Delimitations

1. This study was limited to the available reported results of college reading-study programs published between 1960-1977 which met the selection criteria.

2. Cost considerations limited the number of available dissertations to fifty which met the selection criteria.

3. The studies selected for inclusion were limited to those in which (a) the students involved were already enrolled in college or university, (b) the program emphasized reading and/or study skills, (c) the program effect was reported in quantifiable terms.

DEFINITIONS

The following definitions of terms were used throughout this study:

Critical reading skills: the process of evaluating what one has read by comparison to other sources, considering new ideas or information and detecting bias; considered to be higher-level comprehension skills.29

Flexibility of rate: a learned skill that allows the

reader to vary his rate of reading according to his purpose and the nature of his reading material.\textsuperscript{30}

Learning Center: the term used by Smith, Enright and Devirian in their nationwide survey of learning and study skills programs used to describe Learning Assistance Centers, Learning Resource Centers, Reading-Writing Labs, Reading-Study Centers, Tutorial Centers, Study Skills Centers or any of the variety of places used for instruction in reading and study skills.\textsuperscript{31}

Meta-Analysis: the term used to describe the statistical analysis of a large collection of analysis results from individual studies for the purpose of integrating the findings.\textsuperscript{32}

Program content factors: the twenty-eight factors identified by Fairbanks and listed on pages 11-12 of this study used to describe specific aspects of reading-study programs investigated in this study.\textsuperscript{33}

Program operational factors: the seventeen factors identified by Fairbanks and listed on page 12 of this study used to describe specific practices of reading-study programs such as length of hours, size of group, length of

\begin{enumerate}
\item Ibid., p. 546.
\item Smith, Enright, Devirian, op. cit., p. 67.
\item Gene Glass, op. cit., p. 3.
\item Fairbanks, 1974, op. cit., p. 109.
\end{enumerate}
duration of course, etc. 34

**Reading**: an activity which involves the comprehension and interpretation of ideas symbolized by written or printed language. 35

**Reading Comprehension**: those skills identified by Davis as (1) recall of word meanings, (2) finding answers to explicit questions, (3) weaving together ideas in content, (4) drawing inferences from content, (5) drawing inferences from context, and (6) critical reading were used in this study to represent basic comprehension skills. 36

**Reading, developmental**: instruction designed to systemically develop the skills and abilities considered essential at each grade level. 37 As described by Harris and Sipay it includes the mechanics of reading (five behaviors) and the comprehension of reading (seventeen learned behaviors). 38

**Reading, remedial**: as used in this study the term has been applied to the processes of corrective and/or remedial instruction given to students who have not

34 Ibid.


37 Schubert, op. cit., p. 205.

38 Harris and Sipay, op. cit., p. 9.
developed the skills and abilities considered essential at their grade level.\textsuperscript{39}

**Reading-study program:** as used in this study the term has been used to describe those programs offering instruction in reading and study skills.\textsuperscript{40}

**Study skills:** those skills involved in the ability to locate and comprehend needed materials, to organize and record what is read, to listen and recall, and to underline are included in the components of study skills.\textsuperscript{41}

**SUMMARY**

In this chapter the growth and diversity of college reading-study programs was reviewed, the need for integration of research findings was indicated and a procedure to accomplish the necessary integration was outlined.

The remainder of the study was divided into the following divisions: (1) Chapter 2: Review of the Literature Related to This Study, (2) Chapter 3: Description of the Design and Procedure of the Study, (3) Chapter 4: Presentation of the Results and Findings of the Study, (4) Chapter 5: Conclusions Based Upon the Investigation and Recommendations for Further Study.

\textsuperscript{39}Ibid., pp. 15-17.

\textsuperscript{40}Author's term based on usage in college reading literature.

\textsuperscript{41}Harris and Sipay, op. cit., pp. 7-10, 488-497.
Chapter 2

REVIEW OF THE LITERATURE AND RELATED RESEARCH

I. INTRODUCTION

The diversity existent in college reading-study skills programs was reflected in the professional literature. The rapid increase in the number of research articles was discussed by Alton Raygor et al in a 1973 Review of Literature.¹ His review contained 349 research articles which he compared in quantity to the 75 included in a prior review by Bliesmer (1960). Raygor noted that some 50 percent of all articles of interest to reading researchers were found in only ten journals. Expanding his search to twenty journals produced only an increased 15 percent coverage of articles.

For the present study, in addition to a comprehensive manual search of this literature which included individual cross-checking of periodical and dissertation bibliographies, the researcher used the computer facilities at University of California, Davis to scan more than 49,000 entries. This yielded 676 references. The criterion words and terms used

in this search are included in Appendix A. These references were reviewed and placed in categories. Many of them were not pertinent to or were actually detailed sub-topics (e.g., vocabulary, comprehension, etc.) of the present investigation. Three major divisions of this extensive body of literature were examined in the present chapter. These were:

(1) historical reviews and definitive surveys of programs designed to give perspective to the emerging field;
(2) reports of specific instructional strategies and the content of courses; and (3) experimental studies investigating the effect of instruction. These three divisions covering approximately 200 references, have been considered categorically in the current chapter.

II. HISTORICAL REVIEWS AND SURVEYS OF COLLEGE READING-STUDY PROGRAMS

Narrative historical reports of program development comprised a large proportion of the literature initially reviewed in this study. While not generally based on empirical data, these reports nevertheless reviewed the historical development of individual programs as well as the trends and growth from the perspective of individual program developers and college reading authorities. A significant history of the college reading movement was written by Leedy as his doctoral dissertation in 1958.² Subsequent

researchers have referred to this work frequently.

Historical Reviews

Lowe (1970). Lowe traced the history of college reading improvement programs from 1915, listing major factors influencing the movement by decade. He also traced the current trends through extensive compiling of surveys, which will be discussed at length later in this section.

Enright (1975). In her recent summary of the "frontierland of reading instruction", Enright categorized reading and study programs under the broad definition of "learning assistance programs" and examined program goals. Early college reading programs appear to have been based on the assumption that a student's skills must be learned like a doctor's, lawyer's, swimmer's, or any other apprentice. Considering programs by decades, as Lowe did earlier, Enright noted that remedial reading programs of the 1940's-1950's slowly gained support on only a few college campuses. Weekly conferences in a remedial reading course afforded "individualization." Private conferences were scheduled for seriously deficient students, but few developmental programs were designed to extend the skills of college readers.

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Recognition that reading remediation was inadequate led to programs of the 1950's-1960's designed for the whole student. These programs often operated from the service orientation of college reading and study skills programs, and served as an assistance referral base for content tutoring, remedial instruction, and individualized counseling services. In the 1960's-1970's many of the philosophies and theories which previously had only been described, became an actuality with diagnostic-prescriptive instruction, self-programming, individual interviews and evaluation of growth.

The Harvard Program. The broad range of program goals, objectives and philosophy was noted by writers of individual accounts of program historical growth and was illustrated by two reports, the first a 1959 report to the Harvard faculty. Perry (1959), the director of the university's Bureau of Study, reviewed twenty years of reading-study instruction for Harvard's freshmen. His review has been cited as a singularly effective example of communication. The original experiment in reading improvement there he credited to an experiment in 1938 which consisted of an instructor, some 30 students, a projector, and the first Harvard Reading Films, and was viewed as a


\[6\] Ibid., p. 193.
remedial effort. In 1946 both program and students enrolled were re-evaluated. The Bureau of Study discovered that all freshmen entering Harvard, including those in the "remedial course" scored better than 85 percent of college freshmen in the country. The course was subsequently reorganized and up-graded. Perry described the effect in these terms:

The amount of enthusiasm that exists in this community to read better—or if not better, then at least faster—is evidenced by the fact that we soon found ourselves with nearly 800 people enrolled in the course. When we examined the roll, we found that we had some 400 freshmen from Harvard and Radcliffe, 150 upperclassmen, 230 graduate students from the various schools, especially that of Business Administration, and 2 professors from the Law School.7

Approaching the text as an "adversary," he recounted specific techniques used in the course. Perry concluded with the observation that what Harvard students lacked was not the mechanical skills of reading, ..."but the ability to adjust themselves to the variety of reading materials and purposes that exist on a college level."8

Hodgins (1970)9 writing about the same program, related the evolution of the goal to teach already superior students to apply their skills courageously to the extensive reading required at the university level. Both accounts

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7 Ibid., pp. 193.
8 Ibid., pp. 195.
9 Roderic C. Hodgins, "The Text is the Adversary," Teachers College Record, Vol. 72, No. 1 (Columbia University, September, 1970), 7-22.
reviewed techniques used to deal with obsolescent reading skills learned from previous academic experiences, cramming techniques, experiences with idea reading, and analysis of test-taking approaches. Similar developmental goals were reviewed by McHargue (1975) with Stanford students.

Shaw (1961), writing in the Sixtieth National Society for Study Education Yearbook, found while numerous studies indicate the prevalence of reading-study difficulties among college students, a majority of colleges failed to provide instruction in reading skills or limited such instruction to remedial or corrective services. He suggests that the value of reading instruction has not been readily apparent to some college administrators. He noted the development of three basic organizational patterns of college reading improvement programs: (1) a separate, special service; (2) a part of a language arts course; or (3) an intrinsic part of each subject. He did note the general objective stated by most college reading programs was "to help the students to read to capacity", and found that functional approaches in setting up different programs

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for differing population and institutional needs
inevitably led to differing objectives. Furthermore,

These stem from differences in the curriculum,
administration, interests and qualifications of
teachers, textbooks used, library facilities, and
the student body itself. These variables may
partly account for the diversity of practices
found in college reading programs.12

Shaw, however, identified one common objective that he
believed had clearly emerged from the diversity of programs.
That objective was of "inculcating the study-type of
comprehension skills." He suggested those skills were the
ability to identify and grasp main ideas, and to apply both
inductive and deductive reasoning. While Shaw utilized
extensive reporting of program content in his review, he
did not indicate if his conclusions were derived from a
synthesis of subjective reasoning, his own experiences or
predominantly empirical findings.13

Carter and McGinnis (1966)14 reviewed the history of
college reading at Western Michigan University from 1944-1966
and shared eight principles gleaned from their study. One
important finding was the importance of a student's under-
standing of his reading ability and acceptance of
responsibility for his reading improvement.

12 Ibid., pp. 345.
13 Ibid.
14 H.L. Carter and D.J. McGinnis, Some Factors to be
   Considered in Conducting a College-Adult Reading Program,
   U.S. Department of Health, Education and Welfare, ERIC
Colvin (1970) concluded that college reading programs should include four objectives: (1) that every college student can and should improve his reading and study skills to an optimum level; (2) that college reading and study involves complex skills which may be developed through instruction and practice; (3) that reading is only one factor, but a very important one, in the total adjustment in which students need specialized assistance; (4) that specialized attention to reading is desirable because of the wide range of reading abilities and favorable influence of reading ability on academic progress.

Surveys of Practices and Functions

Definitive state surveys conducted to determine the status, practices and functions of college-university reading and study programs were included in this category. The typical pattern for state and regional surveys appeared to be the mailing of questionnaires inquiring how many programs exist, how many students were served, various institutional profile data, what texts and materials were used, how much individualization was afforded, and some determination among clinical-remedial, corrective-supportive and/or developmental program functions, although such terminology was not always clearly defined.

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A chronological listing of state and regional surveys studied as related literature in the present investigation includes the following: Miklas (1954),
Lowe (Virginia, 1963),
Lowe (Summary, 1929-1966),
Lowe (Florida, 1967),
Lowe and Stefurak (Georgia, 1969),
Schick (1964),
Buffone (1965),
Thurston (1965),
Carter and McGinnis (1966),
Colvin (1968),
Geerlofs and Kling (1968),
Berger (1970),
New York State Department of Education (1971),
Sweiger (1971),
Booth (1972),
Whetstone (1972),
Fairbanks (1973),
Phillips (1973),
Devirian (1974),
Devirian, Enright, Smith (1975),
Huslin (1975),
Hammond (1976),
Harshbarger (1976),
National Conference Teachers of English (1976),
Olsen and Swiss (1976).


21 George Schick, "Diversity in College Reading Programs," College-Adult Reading Instruction, Paul Leedy, ed., Perspectives in Reading Series, (Newark, Del.: International Reading Association, 1964), pp. 14-17.

22 N. J. Buffone, "A Survey of College and University Reading Programs, and an Analysis of the Reading Programs at the University of Oklahoma," (Unpublished doctoral dissertation, University of Oklahoma, 1965), University Microfilms, No. 65-12,953.


Lowe (1966). After reviewing 49 surveys of college reading-study programs from 1929-1966, Lowe suggested that the interpretation of survey data must be undertaken cautiously since all institutions of higher learning were not included and it was not known exactly how many programs actually existed. However his analysis of the trends reported in the surveys was valuable as it reflected changing programs' status.

In a later study (1967) he credited the earliest sustained effort to formally help college students with reading to a report by Moore at Harvard in 1915. Lowe has combined the writing of historical reviews with extensive investigation of program and state surveys, and has utilized reviews of surveys to indicate trends in the college reading movement. Because of a lack of standardized reading


tests, study habits inventories, or more sophisticated
research techniques, he found that quantitative evaluative
data was not reported by surveys prior to 1920 and subjective
evaluative statements characterized the earliest program
reporting.

Lowe found in the period from 1920-1929, that those
institutions which offered college reading instruction
frequently included it as a part of "how to study" programs
or freshmen orientation. They generally stated or implied
some type of evaluation was given, often a measurement of
increase in reading rate and/or comprehension. During the
1930's, programs were primarily sponsored by Education and
Psychology Departments and emphasized study habits,
comprehension and speed of reading. Some gave academic
credit, although no agreement as to the number of sessions,
the materials used or the length of the program was reported.
The return of veterans in the 1940's prompted numerous
reading-study improvement programs, the first publication of
Robinson's Effective Study text (now in its 4th edition),
increased sponsorship of programs by English departments and
a rising number of courses offered for academic credit. 44

Lowe found nineteen surveys of college reading
reported between 1950-1959, a greater number of dissertations
were written on the subject and three reading associations were
formed—the National Reading Conference, College Reading

Association, and the International Reading Association. Increased commercialization of college-adult reading occurred with new technology such as: (1) the Controlled Reader and other mechanical devices to assist rate and eye movement; (2) popular programs for "speed reading", and (3) development of programmed materials to aid individualization. Lowe identified two distinct types of courses which began to be offered more frequently on college campuses: remedial and/or corrective courses for poor readers, and speed reading courses for those who were adequate readers, but desired to improve.\footnote{Lowe, ibid.}

\textbf{Buffone (1965).}\footnote{Buffone, op. cit.} In his dissertation Buffone reported the responses to a lengthy and comprehensive questionnaire sent to one hundred randomly selected state colleges and universities in forty states with a 96 per cent return. Only seventeen of the institutions responding had no programs. Fifty-seven reported having some developmental reading programs for college students, and these programs most frequently emphasized vocabulary development, study skills, and rate and comprehension improvement. Buffone identified the general practice among those colleges and universities that included a reading program in their curriculum to include one or more of the following aspects: (1) reading instruction
for teachers, (2) developmental reading for college students, and/or (3) remedial reading instruction.

Devirian (1973). The Devirian survey of California institutions, which served as a model for an expanded nationwide study the following year (1974) utilized a comprehensive computerized format to rank major services presently performed in learning centers in California's institutions of higher education. These were (1) reading, (2) study skills, (3) writing, (4) mathematics, (5) tutorial services, and (6) counseling. She did not explore the content of center programs, however, in her study.

Devirian, Enright and Smith (1975) were responsible for what appears to be the first comprehensive national computerized survey of Learning Centers in institutions of higher education. This was conducted to discern general trends, functions and purposes of all college and university Learning Centers. Their instrument mailed to 3,389 campuses of 2,783 institutions in the fall of 1974, consisted of 70 items covering data on administration, budget, other programs, facility, staffing, clients, hardware/software, and evaluation. A 38 percent campus return rate was reported. The results were statistically analyzed, cross-tabulated and categorized on a computer format.

47 Devirian, op. cit.

48 Devirian, Enright, Smith, loc. cit.
In spite of the percent of low returns, certain trends were discernible: (1) Over half (61 percent) of respondents reported having program centers, yet more than half of those centers were less than five years old, and nearly all (85 percent) were less than ten years old.

(2) Program centers called "learning centers" and "learning resource centers" were more likely to have become operational since 1970; while 54 percent of program centers called "reading/writing labs" were initiated earlier.

(3) Of those program centers offering credit, "reading/writing labs" tended to offer credit more frequently than either "learning centers" or "learning resource centers".

Further studies of this type are planned by the authors, and they are aware of the importance of such replication:

Further comparative analysis...is necessary to determine how the movement will continue to evolve. For example, will the Learning Center offer more courses for credit and become an academic department or will it continue as an academic support agency? Will the functions of Learning Centers be modified to include instruction in the content fields? Will the Learning Center movement gain continuity or will each program center be totally unique? 49

Additional follow-up procedures are planned to increase the rate of institutional return in future studies.

Regional and nation-wide surveys have helped to define the student population groups for which programs are designed. They also have indicated operational trends.

49 Ibid.
However, they usually define content factors only in the broad, general terms consistent with the survey technique. They do indicate the increasing trend to provide some form of reading-study skills instruction on American college and university campuses for both remedial and developmental student populations.

National Council of Teachers' of English (1975).  

A subcommittee of the National Council of Teachers' of English, operating separately from the various reading organizations reported above, recently undertook a postcard survey of college learning centers to determine the degree to which they utilized individualized and/or programmed instruction and promoted or hindered the objectives of English courses. The committee defined learning skills to include reading for both comprehension and speed, writing, and effective studying. They sent 159 brief questionnaires to selected colleges and received 75 responses. They concluded that "it seems unlikely that mechanization will replace instructors" ... or that "skills centers care only about the mechanical aspects of writing."  

A wide divergence appears to exist between the quality of research reported in this study and the status-type surveys reported by current reading literature. However, the NCTE survey: (1) employed

50National Council of Teachers' of English, loc. cit.
51Ibid., pp. 16.
only a limited sampling of skills centers, yet generalized their conclusions widely; (2) derived subjective value judgments from their report which did not utilize empirical findings; (3) did not refer to the broad body of survey literature on similar and overlapping skills prepared by other investigators. The apparent recent interest by the NCTE in this problem of such long-standing concern was also noted, but was not explained in the study.

This disparity reflected a concern re-occurring throughout college reading literature: "Have developmental programs for reading instruction been included in the college curricula or have they been viewed as a distinct and separate non-credit supplemental and only remedial function?" While the NCTE study evidenced interest in staffing ratios and both quality and degree of individualization offered in Learning Centers, their ambivalent concerns were not clarified by their report. Their apparent disregard for existent reading research in the same field suggests a serious limitation to their findings.

Summary of Surveys and Reviews

These reviews of state and regional surveys have indicated the growing number of college reading improvement and study programs and the variety of program titles now in existence. Typically identified were at least two distinct functions of courses or programs: (1) remedial or corrective programs for poor readers, and (2) developmental
courses for those who wanted to improve reading skills. A wide diversity of course operational practices has been reported. This frequently has revealed concern for individualized vs. mechanized aspects of instruction. Investigators typically have not reported the content aspects in program surveys although they frequently enquired into the types and titles of materials utilized. An increasing number of courses were offered for credit and as an ongoing aspect of college instruction. Several programs, specifically those at Harvard and Stanford, reported college reading programs which were designed to teach already academically competent students to apply their reading study skills more effectively. Other institutions limited reading-study skills instruction to students with severe to inhibiting deficiencies.

III. INSTRUCTIONAL STRATEGIES

In this section the researcher examined two aspects of instructional strategies as reported in published experimental investigations between 1960-1977: (1) differing methods of instruction in college reading programs, and (2) content and operational factors reported by the experimental studies. Both of these aspects have been reviewed separately.

Differing Methods of Instruction

A number of investigators were interested in the effectiveness of different methods of instruction to improve the reading abilities of their college populations.
Chronologically listed, the following experimental investigations examined the effect of a wide variety of instructional techniques: Long (1962),\textsuperscript{52} Feinberg, Long and Rosenheck (1962),\textsuperscript{53} Rankin (1963),\textsuperscript{54} Nikas (1965),\textsuperscript{55} Pauk (1965),\textsuperscript{56} Berger (1966),\textsuperscript{57} Gerber (1966),\textsuperscript{58} Ikenberry et al (1966),\textsuperscript{59} Trautwein (1968),\textsuperscript{60} Phillips (1969),\textsuperscript{61} Yuthas (1969),\textsuperscript{62} Ratekin (1971),\textsuperscript{63} Whittaker (1971),\textsuperscript{64} Colvin (1972),\textsuperscript{65} Santeusanio (1972),\textsuperscript{66} Santucci (1972),\textsuperscript{67} G. Wright (1973),\textsuperscript{68} Brandt (1975),\textsuperscript{69} McHargue (1975),\textsuperscript{70} Eanet (1976).\textsuperscript{71}

Brief summaries of the instructional methods used in all programs considered in this investigation have been included in Tables I, II, III.


\textsuperscript{56} Walter Pauk, "Scholarly Skills or Gadgets?" \textit{Journal of Reading}, 1965, pp. 234-239.

\textsuperscript{57} Allen Berger, "Effectiveness of Four Methods of Increasing Reading Rate, Comprehension, and Flexibility," (Unpublished doctoral dissertation, Syracuse University), Cooperative Research Program of Office of Education, U.S. Department of Health, Education, and Welfare; Educational

59 S.O. Ikenberry and others, "Effects of Reading-Study Skills Improvement and Reduced Credit Load on Achievement and Persistence of Failure Prone College Freshmen: A Pilot Study," U.S. Educational Resources Information Center, 1966, ED 022 654.

60 Marvin E. Trautwein, "The Role of a General Psychology Course in Improving Reading and Study Behavior of College Freshmen," (Unpublished doctoral dissertation, University of Minnesota), University Microfilms, Ann Arbor, Michigan, 1968, No. 69-1541.


64 Jeweleane W. Whittaker, "A Longitudinal Study to Determine An Effective Method of Teaching Reading to College Students Whose Backgrounds are Partially or Wholly Disadvantaged," U.S. Educational Resources Information Center, ERIC Document ED 056 849, December 1971.


66 Richard F. Santeusanio, "The Relationship of Individual Differences to Two Instructional Approaches in a College Reading-Study Skills Course," (Unpublished doctoral dissertation, University of Massachusetts), University
This study compared two methods: the use of printed materials with the use of mechanical devices for improving the reading efficiency of college students enrolled at the University of Oklahoma Reading Laboratory. Six classes received the two methods of instruction for eight weeks. No credit was offered but a fee equivalent to one regular credit hour of instruction was charged. The effectiveness of the two methods was compared on the basis of mean gains from pre-test to post-test for reading rate and comprehension. Comparability between the two methods was

Microfilms, Ann Arbor, Michigan, 1972, 73-14,674.


Mchargue, loc. cit.


Long, loc. cit.
not examined; no outside treatment group was included, and no explanation for this departure from research control procedures was given. Although all participants were apparently volunteers procedures were used to determine that no statistically significant differences were present before instruction began. The two methods were found to be equally effective for improving rate of reading and level of comprehension, however the experimental group using printed materials scored significantly higher in a subtest of paragraph comprehension than the group using mechanical devices.

A mandatory course in college study skills was described by Feinberg, Long and Rosenheck (1962)\textsuperscript{73} who concluded that best results are secured when students recognize their own need for training. Negative response to instruction and testing from the students apparently invalidated all test results from this course.

Rankin (1963)\textsuperscript{74} attempted to determine the effects of speed-reading training compared to comprehension emphasis. Contrary to expectations, he found that the students in the speed-comprehension group significantly improved their rate with no significant differences in vocabulary or comprehension. He suggested one possible cause of poor comprehension may be the act of slow reading itself.

\textsuperscript{73}Feinberg, Long and Rosenheck, loc. cit.

\textsuperscript{74}Rankin, loc. cit.
In a study reported by Nikas a developmental teacher-oriented class was compared to a machine-oriented class taught by the same instructor but at different semesters. The teacher-oriented group received demonstrations of effective techniques while the machine-oriented class viewed films. Both groups covered similar content including lessons on comprehension, critical reading, skimming and scanning et al. Apparent limitations to the study were noted.

Kauk (1965) compared a brief six week study course with a longer fourteen week course both taught at Cornell University. However he provided such limited descriptions of content and operational differences as to limit further analysis.

Berger (1966). Berger's major investigation, supported by a U.S. Health, Education and Welfare grant, was preceded by a preliminary pilot study at the same institution. A comprehensive review of the literature and a chart of studies from 1934-1965 was included in this study of four methods of college reading instruction using 255 students at Syracuse University. Treatment methods were randomly assigned to instructors and three sections for each of four methods used. The methods examined were based on:

(1) Paperback Scanning, (2) Controlled Pacing, (3) Controlled

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75 Nikas, loc. cit.
76 Pauk, loc. cit.
77 Berger, loc. cit.
Reading, and (4) Tachistoscopic techniques. The instructors were familiarized with the investigation format and met regularly in staff seminars. All experimental groups made gains in reading rate and flexibility, but no one method resulted in significant changes in comprehension. The control group did not make significant gains in either comprehension or in reading flexibility. The paperback scanning method demonstrated significantly superior results over any other method. Eight weeks after completion of instruction, participants were retested and appeared to have maintained their gains in rate.

Gerber (1966) attempted to evaluate which of four alternative orientation-study methods were most effective with freshmen but results were inconclusive.

Ikenberry (1966) in a complete well-designed study, investigated the effects of a reduced credit load and reading-study instruction. He concluded that failure-prone freshmen assigned to a special reading class and a reduced credit load enjoyed improved academic achievement and reduced withdrawal rates.

Trautwein (1968) compared reading gains made by students receiving counseling and orientation vs. orientation alone within the framework of a General Psychology

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78Gerber, loc. cit.
79Ikenberry et al, loc. cit.
80Trautwein, loc. cit.
course. Students were satisfied with training, but no significant differences were found.

Phillips (1969) investigated the relative effectiveness of three methods of teaching reading to disadvantaged black college freshmen in North Carolina, utilizing students who were voluntarily enrolled in a no-credit reading skills course. Four classes from a total of fourteen were randomly selected for this study and then randomly assigned to different instructional approaches. The three methods were:

1. Individualized reading,
2. Teacher-guided reading, and
3. Audio-visual based reading.

A control group received no instruction. Phillips found no significant differences among the three treatments with respect to the different instructional approaches, however the teacher-guided method involved a slightly larger difference between means than the other methods. The control group made the lowest gains of the four groups.

Yuthas (1969). An investigation of two approaches to the teaching of remedial reading at the University of Colorado compared a traditional classroom method taught by professional instructors to a laboratory method using other college students as supervisors. No significant differences were found in any of the comparisons although the

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81 Phillips, loc. cit.
82 Yuthas, loc. cit.
analysis was difficult to pursue because of severe attrition of the control group.

Ratekin (1971)\textsuperscript{83} compared reading skills instruction to study skills instruction and was not able to identify significant differences in effects of the two types of instruction.

Whittaker (1971)\textsuperscript{84} examined the effectiveness of a text-book and machine oriented approach. She found the machine group appeared to have made a slight gain but it was not significant statistically.

Colvin (1972)\textsuperscript{85} attempted to identify a treatment which brought greater improvement in rate, comprehension, vocabulary and total reading scores. He utilized four groups: (1) group I received instruction which utilized reading films, lectures, class discussions, a programmed text, and exercises; (2) group II utilized films, lectures and text only; (3) group III used lectures and text, and (4) group IV used only a programmed text. Improvement scores between groups were so slight that further analysis seemed futile. He noted however, that the highest dropout rates occurred in group IV.

Santeusano (1972)\textsuperscript{86} compared freshmen randomly

\textsuperscript{83}Ratekin, loc. cit.
\textsuperscript{84}Whittaker, loc. cit.
\textsuperscript{85}Colvin, loc. cit.
\textsuperscript{86}Santeusano, loc. cit.
assigned to one of three groups: a non-credit teacher directed reading-study skills class; a non-credit student directed reading-study skills class and a control group receiving no treatment in reading-study skills. Student participation was required as a condition for acceptance at Suffolk University in Boston. No significant improvements in scholastic standing were noted on a comparison of verbal grade point averages after instruction. Student participants in this study were selected from the lowest level of college applicants.

Santucci (1972)\textsuperscript{87} compared group process training and study skills training to raise self-confidence levels of disadvantaged freshmen. A combined treatment produced higher grade point average changes.

G.L. Wright (1973)\textsuperscript{88} investigated three instructional treatments on disadvantaged urban black students and found significant gains made by all methods over no instruction in reading. Teacher-directed, forced-pace instruction appeared to produce most significant rate and comprehension gains when combined with periodic individual practice.

Brandt (1975)\textsuperscript{89} inquired into the issue of internal vs. external locus of control and performance correlated with

\begin{itemize}
  \item \textsuperscript{87} Santucci, loc. cit.
  \item \textsuperscript{88} G.L. Wright, loc. cit.
  \item \textsuperscript{89} Brandt, loc. cit.
\end{itemize}
improved reading rate and comprehension using two methods of treatment. The results supported the relative effectiveness of motivated instruction over controlled instruction and non-specific treatment, but did not associate personality factors with improvement in reading ability.

McHargue (1975)\textsuperscript{90} compared (1) Classroom-based, (2) Self-paced with (3) Self-managed academic reading efficiency training programs on "very bright" students enrolled at Stanford University. He was interested in the relative effect of the three methods of reading improvement on students' reading efficiency scores, as well as the personality factors which enable people to manage their own training. As in the carefully controlled Herman study cited on page 95 of this section, McHargue also incorporated the findings of past researchers in designing his study, and utilized stringent research control factors. A randomly assigned group of 108 volunteers completed the nine week course. The major between-group comparison indicated that Post-Test Reading Efficiency means for the three treatment groups were not significantly different, but all three were significantly higher than those of the control group. McHargue suggested follow-up research would be valuable to determine what the results would be with different populations in different settings provided with the same

\textsuperscript{90} McHargue, loc. cit.
training.

Eanet (1976)\textsuperscript{91} compared a new study procedure to the "traditional" Robinson's SQ3R method. The assessment procedures used did not support the effectiveness of either study/reading method.

Reports of Course Content Factors

The researcher also examined each experimental investigation in terms of its description of the student population group which utilized college reading-study services. Of the sixty-six studies, only seven did not provide adequate information to permit classification according to this criterion.

The diversity of program content factors identified by other investigators appeared to be less diverse when the programs were categorized in terms of the student population served. Four categories were utilized: (1) the content of programs developed for high-risk, open admission students which were considered under the term Corrective Programs; (2) the content of programs for students on academic probation which were considered under the term Academic Support Programs; (3) the content of programs for entering freshmen and general college students which were considered under the term Developmental Programs; (4) unclassified programs. This section considers each of these aspects of program content.

\textsuperscript{91}Eanet, loc. cit.
The sixty-six studies were examined to determine the extent to which they reported program content in sufficient detail to allow replication of their findings. Complete summaries of course content for all programs are included in Tables I, II, III, IV. Following this examination of content, Program Operational Methods will be considered.


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92 Ruth H. Mattila, "An Experimental Study of a Basic Communications Skills Program for Freshmen at New Mexico Western College," (Unpublished doctoral dissertation, University of Arizona), University Microfilms, Ann Arbor, Michigan, 1960, 60-5633.

94 Rankin, loc. cit.
95 Allen L. Sosebee, "Four Year Follow-Up of Students in the Indiana University Reading Program," (Unpublished doctoral dissertation, Indiana University), University Microfilms, Ann Arbor, Michigan, 1963, 64-5142.
96 Berger, loc. cit.
97 Ikenberry et al., loc. cit.
98 George E. Regensberg, "Relationship Between Participation in a Reading Improvement Course and Grade Point Averages of College Freshmen," (Unpublished doctoral dissertation, Rutgers-The State University), University Microfilms, Ann Arbor, Michigan, 1966, 66-12,078.
100 Phillips, loc. cit.
101 Yuthas, loc. cit.
102 Guy B. Friend, "The Relationship of Reading Performance to Academic Achievement of a Selected Group of Northeastern State College Freshmen," (Unpublished doctoral dissertation, University of Tulsa), University Microfilms, Ann Arbor, Michigan, 1970, 70-6671.
106 Ratekin, loc. cit.
Only three studies described course content sufficiently to permit replication (Mattila (1960); Clark (1963); Phillips (1969)). Frequently, content descriptions for corrective programs referred to instruction in broadly definitive terms as having included lessons in vocabulary, reading rate, comprehension, and study skills.

Lists of equipment, materials and texts used were provided by five investigators, Ikenberry (1960); Regensburg (1966); Yuthas (1969); Whittaker (1971); Reese (1975). Yuthas (1969) apparently depended upon the content of Science Research Associates and Reading for

108. Whittaker, loc. cit.
111. Santeusiano, loc. cit.
112. Santucci, loc. cit.
113. G. Wright (1973), loc. cit.
Understanding kits supplemented by Controlled Reading lessons at approximately junior high reading levels (GH level) for both teacher-directed and student-supervised sections of his investigation. Carpenter and Sawyer (1971) referred to the use of "self-programmed materials," but did not describe them. Sant cusiano (1972) utilized the McGraw-Hill Basic Skills System testing profile, but did not indicate what other components were included in his self-selected, self-directed, self-corrected curriculum. He provided only a list of topics and did not indicate if other programmed materials which are available for this system were used. Regensberg (1966) provided a list of texts and emphases utilized in his program but neglected any discussion of content.

Nine studies referred to some study or counseling intervention or a combination of those components for the remedial population. The most frequently mentioned aspects of instructional content were notetaking, outlining, time management or scheduling, recall and listening skills, research skills, organization, and examination preparation. Of the studies which referred to combined study-counseling treatments, only one, (Lesnik, 1968), provided a pattern for the individual interview procedure which was followed. Ikenberry (1966) incorporated a counseling approach with reduced course load as well as providing instruction in vocabulary, reading flexibility, comprehension and study skills. He included lists of the course objectives and
procedures in very general terms.

One representative illustration of the type of description of course content encountered has been selected from Mattila's (1960) account of a freshmen orientation program. 116

After the first six weeks, the experimental subjects met twice each week as a class group for instruction which emphasized the development of basic communication skills. The work each class day included reading, writing, listening, and discussion activities and exercises. No prepared manuals or workbooks were used. However, students were informed of the values of some of these materials and were encouraged to make individual use of them. They were particularly encouraged to read parts of Robinson's Effective Study and to check their own abilities in spelling and arithmetic by taking the tests provided in this text.

Of the eighteen sessions, nine employed reading as the central activity; three employed short lectures and dictations as central activities; and, three utilized vocabulary exercises as the central activity. Reading materials for the course employed content from the areas of science, history, and literature. All of the material was of a mature but non-technical nature. Study guides which set a purpose for reading and permitted a check on comprehension were provided with each reading selection. Vocabulary exercises, dictation and discussion were not isolated drills but were related to topics presented in the lectures or readings.

Mattila supplemented this description with an outline of the course and the references used in the appendix to her study. The course was outlined for eighteen class sessions; the complete outline for topic two was as follows: 117

116 Mattila, op. cit., pp. 73-74.

117 Ibid., p. 110.
II. Topic: Taking Class Notes

A. Summarizing the main idea from oral presentations

B. Taking a short dictation.


Investigators have apparently been caught by the dilemma of how much description of course content should be supplied. Phillips (1969) resolved the issue by including a Reading, Study Skills and Correlated Instructional Materials Guide for all three approaches in her study of black college freshmen, as well as including daily lesson plans. Her attention to these details has made this study of real value to subsequent investigators.118

Corrective program reports may have reflected the tendency by their investigators to view program content for remedial students as obvious extensions of secondary-level skills instruction. They may have utilized corrective reading techniques combined with study-counseling interventions designed to prepare these populations for academic demands. However, specific statements to this effect were not encountered.

A summary of course content aspects of these studies was included in Table I.

TABLE I

SUMMARY OF CORRECTIVE PROGRAMS

1960 - 1977

24 STUDIES POPULATION N = 3,926

Control Rating:

Adequate = Good research design
Moderate = Minor limitations
Deficient = Serious design problems
<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>R. Mattila 1960 University of Arizona Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Compared an experimental orientation program emphasizing basic communication skills to an existing orientation plan.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Entering freshmen at New Mexico Western College of average or below average ability. N=100 (final N=80)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Experimental group received instruction in listening to lectures, taking notes, reading rate and comprehension; outline of course content included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Sections met in assembly test sessions for 6 weeks; then groups of 50 met 2 days each week for 2 hours for 9 weeks; lecture method primarily used.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Motivation for learning and unusual environmental influences noted as poor; neither group made significant gains in listening or reading but did gain in vocabulary and total reading; fewer students dropped out of experimental group.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>C. Clark 1963 Brigham Young University Dissertation</td>
</tr>
<tr>
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<td>--------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Attempted to: (1) identify and diagnose reading deficiencies of handicapped students, (2) develop and evaluate a remedial program, (3) make recommendations for ongoing programs.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Matched pairs of Pacific area freshmen who scored below the 25th percentile of Cooperative English Test were randomly assigned to either experimental or control groups. N=72</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Instruction was organized in 4 phases: group, lab, outside assignments and weekly individual conferences; description of content included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Students met 3 times weekly all year in a diagnostic-prescriptive program; operational factors included.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Comprehensive lists and explanations of deficiencies provided; a significant difference in reading growth was achieved by the experimental group, but had little immediate effect upon general academic achievement of disabled readers during study.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>E. Rankin 1963 Texas Christian University Paper</td>
</tr>
<tr>
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<td>-----------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Determined the effects on reading improvement of speed training vs. comprehension.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Students with poor comprehension enrolled in reading courses; few students equaled or exceeded 50th percentile of national norms for rate or comprehension. N=96</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Speed-emphasis portion used various rate improvement techniques and equipment; comprehension-emphasis portion worked on specific skills, received training in effective study skills and spent time with vocabulary lessons. Limited description of content included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Semester long program met in groups of about 20 students each 4 times weekly; other content factors not described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Contrary to expectations, the speed comprehension group read significantly faster with no significant differences in vocabulary, comprehension or total test score; suggests one possible cause of poor comprehension may be slow reading itself.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>A. Sosebee 1963 Indiana University Dissertation</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Four year followup of students enrolled in a reading program to determine their achievement, dropout rate, and personal evaluation compared to non-participants.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Low scoring freshmen who had enrolled voluntarily in the course were compared to non-enrollees. N=200</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Individualized and group practice given in main idea reading, comprehension, detail reading, skimming, flexibility, notetaking, concentration et al.; limited description of content included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Two hours credit given for the semester course which met 2 times weekly; operation factors included.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Neither school success (academic achievement) or persistence appeared to have been influenced by participation in the course.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>A. Berger 1966 Syracuse University Dissertation</td>
</tr>
<tr>
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<td>-----------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Determined the effectiveness of four methods of increasing rate, comprehension and flexibility; retention of gains following instruction, effect of increased rate on reading, differences in gains, et al.</td>
</tr>
</tbody>
</table>
| STUDENT DESCRIPTION | Freshmen enrolled in course whose verbal College Board score was at or below 500: 
\[ N=255 \]
\[ T_1=47, T_2=43, T_3=45, T_4=44, \text{ control}=76 \] |
<p>| PROGRAM CONTENT | Course designed to develop skills in rate, comprehension, vocabulary and study; methods were (1) tachistoscope, (2) controlled reader, (3) controlled pacing, and (4) paperback scanning. Extensive description of content, methods and materials included. |
| PROGRAM OPERATION | Twenty-five lessons given over 6 weeks by experienced instructors; some operational factors uncertain. |
| PROGRAM EFFECT | Significant gains in rate and flexibility were made by all groups, but not gains in comprehension; Paperback Scanning method was superior to others in rate gains followed by Controlled Reading Method. |</p>
<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>S. O. Ikenberry et al 1966 West Virginia University, Morgantown Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Attempted to determine if reading study skills instruction and reduced academic credit load could increase the probability of academic success and reduce withdrawal rates of marginal students.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Entering freshmen with predicted low GPA's who were not required to take remedial English, were randomly assigned to one of three treatments.</td>
</tr>
<tr>
<td>N=330 (I=78, II=89, III=64, IV=99)</td>
<td></td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Reading class had 3 objectives: increase reading competence, improve study skills, smooth academic and social transition to University. Techniques included traditional experiences, laboratory, discussions and counseling. Content and procedures described.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Class met 3 hours weekly for 3 credits; other operational factors described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Concluded that failure prone freshmen assigned to special reading class with a reduced credit load enjoy improved academic achievement and reduced withdrawal rate.</td>
</tr>
</tbody>
</table>
### TABLE I, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>G. Regensburg 1966 Rutgers University Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>A study to determine the relationship between participation in a volunteer reading course and grade point average.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Four low scoring matched groups of freshmen: two experimental groups who took the course and two control groups who did not. N=170 (4 groups of 35 each)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>A 2250 minute summer course and a 900 minute fall course were studied. Outline of instructional program included and texts listed. Limited description of content provided.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Aside from time and scheduling factors, operation factors and use of class time were not clearly described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Post-test gains in total reading score were greater for the fall group, but no significant differences in grade-point average were found.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>M. Lesnik 1968 University of Pennsylvania Dissertation</td>
</tr>
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<td>---------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Investigated effects of individualized study counseling program.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Volunteer-freshmen with study behavior difficulties who were at or below 25th percentile on a study habits check.</td>
</tr>
<tr>
<td></td>
<td>N=70 (35 experimental and 35 control)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Individualized instruction, counseling and some practice of Robinson's SQ3R study method and discussion of study behavior problems were utilized; transcripts of random sample of interviews included. Study topics were uncertain but valuable interview format included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Individualized procedures and discussions used in 3 bi-weekly sessions; other operation factors uncertain.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Concluded that treatment was responsible for the higher GPAs of experimental students and attempted to identify personality types common in the study.</td>
</tr>
</tbody>
</table>
### TABLE I, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>G. Phillips 1969 North Carolina Central University Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Purposed to determine the effectiveness of 3 approaches to teach reading and study skills to disadvantaged black college students.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Disadvantaged black freshmen enrolled in 4 of 14 sections of reading course. N=102</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Three approaches used: I. Teacher-guided, II. Individualized, III. Audio-Visual; same goals for all approaches. Materials were listed and courses described.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>All three groups met 30 hours, 3 times weekly with 23 hours of actual instruction; other operational factors described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>No significant gains were noted for any of treatments although teacher-guided group made greater gains in comprehension than other treatments and control; tests were difficult for group.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>L. Yuthas 1969 University of Colorado Dissertation</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Experimentally compared two remedial programs, a classroom approach vs. a laboratory approach using other students as supervisors to determine if a relationship exists between enrollment, academic achievement and persistence in college.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Entering freshmen scoring in 4th percentile of ACT were registered for course and compared to similar non-enrollees. N=124</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>(1) Experimental students worked with a lab assistant in SRA kits to acquire skills and a score sufficient to pass the course; (2) experimental students worked with experienced faculty using same materials, text, and other lessons. Brief descriptions of content included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Students completed 30 hrs. of instruction meeting 3 times weekly for 10 weeks; groups were primarily organized in practice sections; other operational factors uncertain.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>GPA achieved by students in traditional classroom method was significantly higher than self-help program; severe attrition in control groups noted; suggests than enrollment in remedial reading was significantly related to persistence in college.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>G. Friend 1970 University of Tulsa Dissertation</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Investigated the relationship of reading performance to academic achievement.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Predominantly freshmen enrolled in a developmental reading course at Northeastern State College were compared to randomly selected freshmen non-enrollees.</td>
</tr>
<tr>
<td></td>
<td>N=420 (210 experimental, control 210)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>An individualized credit course which included diagnosis and individualized instruction on speed and comprehension, vocabulary, spelling and study habits; very limited course description supplied, but corrective emphasis suggested.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Instructors used textbooks, lectures and a specially equipped reading room, but other factors were uncertain (limited description).</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Academic achievement measured by college grade point averages did not indicate significant difference favoring experimental students. However, average scores in certain variables indicated greater number of deficiencies among students taking the course.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>Lowe 1970 University of Southern Florida-Tampa Paper</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Deficient</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>An individualized college reading improvement program.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Pretesting indicated participants were significantly inferior readers to other freshmen, N=65</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Individually planned program and different methods and materials were not described.</td>
</tr>
<tr>
<td></td>
<td>Content factors uncertain.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Students averaged 40 hours of class participation in the 15 week course meeting 3 times weekly; other operational factors uncertain.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Since 73% of students felt program had helped and since their grades were neither better nor worse than non-participants, author believed program did benefit these inferior readers.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>T. Carpenter 1971 Clemson University, South Carolina Paper</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Study compared an organized program of remedial reading and composition classes for high-risk students.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Freshmen students assigned to special English on basis of low verbal SAT scores were offered opportunity to take course.</td>
</tr>
<tr>
<td></td>
<td>N=90 (experimental N=26 and control N=54)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Primarily self-programmed materials used; individual schedules set with instructors; no further description of contents included but authors said list available.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Three one hour sessions for 14 weeks, 1 unit academic credit; other operational factors uncertain or not described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Experimental groups initial reading scores significantly lower than control but improved to extent they exceeded controls on rate difference in vocabulary; total reading score was no longer significant difference; significant gains in rate made with no loss in comprehension.</td>
</tr>
</tbody>
</table>
TABLE I, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>D. Payne 1971 Northeastern State University at Natchitoches, Louisiana Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Deficient</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Investigated retention of gains in reading skills over 5 semesters. Follow-up of original study by Dubois.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Students who enrolled in the reading program (original N=100 experimental) were compared to students who did not enroll (original N=60)</td>
</tr>
<tr>
<td></td>
<td>Total retest N=33</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Program content factors were not described.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Program operation factors were not described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Academic achievement of the experimental group was superior to the control group in three of the five semesters under consideration, however high mortality of retest group limited any conclusions.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>N. Ratekin 1971 Paper</td>
</tr>
<tr>
<td>-------------------</td>
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</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Studied effects of reading skills instruction vs. study skills instruction in improving reading and academic performance.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>All students scoring below 30th percentile on Iowa Silent Reading Test who were also disadvantaged; students also classified by rural and urban background. N=120</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>(1) Study skills included study techniques, taking exams, taking notes, organizing text materials, use of library; (2) reading skills included word attack, comprehension, critical reading and rate. Limited description of content.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Students met 3 times weekly for 10 weeks in groups of 6-10 students; description of use of class time not provided.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Significant difference favoring instruction on all three variables; no apparent difference in effectiveness of two types of instruction.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>Swalm and Cox 1971 (Unknown) Paper</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Deficient</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>A reading program that combined skill development with literary content.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Special admission students entering college.</td>
</tr>
<tr>
<td></td>
<td>N=uncertain</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>13 skills were listed including main ideas and details, sequence, flexibility, underlining, summarizing, synthesis of several sources, critical reading, comparing and contrasting ideas, notetaking, study reading, taking exams, organizing study, et al.</td>
</tr>
<tr>
<td></td>
<td>Specifics of presentation uncertain.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>All factors were uncertain other than presentations occurred in a class setting.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Groups were compared to assumed normal gains; substantial improvements shown and 31% of participants moved to entry reading level for college freshmen.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>J. Whittaker 1971 Texas Southern University Paper</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Attempted to determine effectiveness of text book oriented vs. machine oriented approaches for students with below level college reading competancy.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Beginning freshmen were arbitrarily divided into two treatment groups. N=340</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Experimental group used a variety of machines; text book group (also called control group) used text material. Descriptions of content were not included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Students met 18 weeks for 30 hours generally for group presentations; other operational factors uncertain.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>The machine group appeared to have a slight advantage but no statistical differences were found; visual regression was more prevalent in text book group and among sporadic attenders.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>C. R. Colvin 1972 State University College, Fredonia, New York Paper</td>
</tr>
<tr>
<td>-------------------</td>
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</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Attempted to find treatment which brought greater improvement in rate, comprehension, vocabulary and total reading score.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Entering freshmen below 50th percentile on Cooperative English Comprehension Test randomly assigned to one of four treatments. N=89 (I=16, II=16, III=16, IV=11, control=30)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Group I. reading films, lecture, class discussion, programmed text, and exercises; II. films, lecture and text only; III. lecture and text only; IV. programmed text only; no further description of content included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Groups met 2 hours weekly for 12 weeks; no other description of operational factors provided.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>The improvement scores between groups was so slight, further analysis seemed futile; highest dropout rate occurred in group IV.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>M. Harshbarger 1972 Ball State University Paper</td>
</tr>
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</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Historical 4 year development of a reading-study program designed to individualize student-teacher contact and student academic success reviewed.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>&quot;Directed admission&quot; freshmen (low SAT scores and poor high school grades) N=Uncertain (original N was 50)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Lists of materials were included; topics discussed included vocabulary, comprehension, particularly critical reading, and notetaking. Limited description of content.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Individualized analysis of students needs and some small group instruction; other factors explaining use of time not included.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Attrition rate cut from 90% in year 1 to 48% by year 4 and fewer students remained below 10% percentile on pretest; more students read at or above 30th percentile on post test.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>R. Santeusanio 1972 University Massachusetts Dissertation</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Attempted to identify type of students benefiting from reading/study skills courses which utilized either (1) Teacher-directed approach, or (2) Student directed approach.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Freshmen scoring below 475 on SAT-V, and who graduated in bottom 60th percentile of high school class were required to enroll. N=87</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Students in student directed group received individual profiles, worked on skills in self-directed, self-selected, self-corrected materials; teacher-directed approach followed &quot;traditional&quot; lecture-discussion method. Limited description provided.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Two sections of each treatment were held twice a week for 15 weeks; operational factors included.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Program had only slight effect in producing significant improvement in scholastic standing of students, although fall verbal GPA indicated significantly higher scores for teacher-directed group. Failed to investigate differences between experimental group and controls on post reading test gains.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>A. Santucci 1972 Lehigh University Dissertation</td>
</tr>
<tr>
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</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Compared the effects of Group process training (T-group) vs. Study skills training to raise self-confidence levels and attitudes.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>&quot;Disadvantaged&quot; college freshmen. N=64</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Skills seen as both academic and personal; brief resumes of Study skill training, T-group process, and Combined training included; actual study skills content uncertain.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Groups of 8 students met 2 hours weekly for 15 weeks with trained counselors to discuss content.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>T-group process appeared to be effective in raising students self-confidence; Study skills training was statistically significant in skill development but Combined treatment produced higher GPA.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>G. Wright 1973 Western Illinois University Dissertation</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Investigated the effectiveness of three instructional treatments upon reading skills of disadvantaged students.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>College students enrolled in reading course: &quot;disadvantaged&quot; urban blacks were counseled into the course. N=99 (N_E = 74 and N_NT = 25)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Treatment groups received lectures and demonstrations on study and study techniques, concentration and remembering, comprehension, rate, and vocabulary; extensive description of content included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Four reading sections met for one 50 min. session 4 times weekly for 9 weeks. Brief descriptions of operation factors included.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Significant gains in rate, vocabulary and comprehension made by each treatment; large group, teacher-directed forced pace instruction appeared to produce most significant gain combined with periodic individual practice.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>Turner, Sais and 1974 Kent State University Gatewood Paper</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>A study to determine effects of a learning development program on volunteer participants as compared to non-participants.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Open admissions program for students whose composite ACT scores at entrance were 20 or less.</td>
</tr>
<tr>
<td>N=758 (379 participants and 379 non-participants matched by class and QPA)</td>
<td></td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Four components: (1) study habits and attitudes; (2) reading, (3) individualized study, (4) tutorial assistance as needed; limited description of content included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Individualized and small group diagnostic approach for all four aspects of &quot;Reading Course&quot; included 15 non-credit sessions. Other operational factors not included.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Mean QPA for participants moved consistently upward over three semesters studied; combination of components based on individualized diagnosis apparently influenced grades both immediately and over the time studied.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>T. Reese 1975 Temple University Dissertation</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Deficient</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Assessed reading skills program at Temple University.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Freshmen as well as transfer students scoring below 20 on Cooperative English Test, Reading Section were &quot;selected&quot; to participate. N=242</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Program content factors were not described.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Program lasted 14 weeks and aimed at a ratio of 1 teacher per 10 pupils. Program operation factors were not described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>All students made significant raw score gains on same form of administered after instruction, particularly in reading comprehension, GPA differences inconclusive.</td>
</tr>
</tbody>
</table>

119 Mary L. Furey, "A Comparative Study of the Effect of Two Programs on the Improvement of the Quality Point Average of Failing Students at the University of Miami," (Unpublished doctoral dissertation, University of Miami), University Microfilms, Ann Arbor, Michigan, 1964, 64-8837.


125 Stephen J. Anthony, "The Effects of a Study Skills Course and a Self-Understanding Program on Low Achieving
None of these studies referred to instruction in the areas of vocabulary, reading rate or comprehension, but rather described, again in general terms, various study and/or combined counseling treatments which provided assistance in notetaking, time management, study techniques and outlining. All of these studies apparently utilized "study skills" which frequently included such skills as notetaking, time management and examination preparation techniques, but even brief explanations of content factors were supplied by only two investigators (Durkee (1966); Hutchinson (1970)). Text titles were supplied by two investigators (Durkee (1966); Anthony (1971)). Kaye's (1971) study referred to individual counseling, group guidance procedures and training in notetaking, outlining, budgeting time, research and paper writing, ..."and other techniques"...which were not specified. Other investigators would not know specifics of the three different treatments given to members of the experimental group three hours each week for ten weeks.

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Hutchinson (1970),\(^{129}\) who utilized a single method, notetaking, to improving freshmen academic achievement, described the course content as follows:

The content of the course developed in connection with this study consisted of both demonstration and application with supervision of the basic skills in notetaking, including the topical, sentence, and paragraph methods. The subjects selecting one of the notetaking methods, took notes from taped classroom lectures of their actual teachers in subjects other than those presented in first semester of the freshmen year. Instruction was given in summarizing their notes, as well as practice in anticipating examination questions from these summarizations. The program was limited to 12 classroom hours of supervised instruction, with practice in the various notetaking procedures.

Samples of the three outline methods were included but none of the specific sources used in preparing these lessons were indicated in the reports.\(^{130}\)

Durkee (1966) provided a comprehensive review of study skills from 1908 to the present and included a syllabus and outline of the short term study course he utilized with probationary freshmen.\(^{131}\) Church (1970) listed the "schedule of treatments" by topics discussed in his semi-structured seminar with sophomores on probation.\(^{132}\) Eight studies exercised adequate research control principles, but described the content of the treatments they utilized in

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\(^{129}\) Hutchinson, op. cit., pp. 4, 85.

\(^{130}\) Ibid., pp. 103, 104-5, 106-7.

\(^{131}\) Durkee, op. cit., pp. 24-52, 103-107.

\(^{132}\) Church, op. cit., pp. 46-51.
very limited styles. Other investigators desiring to utilize similar methods with similar groups would need to search for suitable published content or develop their own based on student needs. Replication of these otherwise adequate investigations would not be possible without this data.

These studies have been summarized on Table II.
### TABLE II

**SUMMARY OF ACADEMIC SUPPORT PROGRAMS**

**1960 - 1977**

9 STUDIES  POPULATION N=789

**Control Rating:**

- Adequate = Good research design
- Moderate = Minor limitations
- Deficient = Serious design problems
### TABLE II

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>M. Furey 1964 University of Miami Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Compared the effectiveness of a program of Guided Studies to a program of Reduced Course Load for purpose of rehabilitating students in academic difficulty.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Students failing to meet academic requirement and/or failing who applied and paid $125 additional tuition, were then selected to participate in Guided Studies; students were also informed of a special Re-admission Program involving reduced course load only (no fee or special services). N=236</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Guided Studies students received study skills course which was not described; special-help classes received counseling and a reduced course load; content factors were not included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>All operational factors uncertain.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Quality point averages (QPA) of deficient participants were compared; both programs produced essentially the same degree of improvement.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>P. Durkee 1966 University of Southern Mississippi Dissertation</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Determined the effectiveness of a short-term study-skills course.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Freshmen students on academic probation.</td>
</tr>
<tr>
<td></td>
<td>N=71 (Control A=23, Control B=24, Experimental C=24)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Study skills followed outline of Robinson's SQ3R; topical course syllabus and lists of readings suggested to students included. Brief description of content included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Volunteer students met for 2 hours once weekly for 5 weeks in afternoons for lectures; credit status of the course not given.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>The short-term course had no significant effects on the experimental group and was not recommended to be continued as taught.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>Roth, Hauksch and Peiser 1967 Illinois Institute of Technology Paper</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>A therapeutic counseling approach for under-achievers based on the dynamics of non-achievement; participants were all in upper quarter of SAT scores.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Male students about to be dismissed for low academic achievement were given the opportunity to participate or be dismissed from school.</td>
</tr>
<tr>
<td></td>
<td>N=104 (Experimental N=52 and &quot;matched&quot; comparison group of 52 students)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Brief general description provided dealing with study problems; additional references provided on theory and assumptions of non-achievement syndrome/identification therapy.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Students met twice weekly all semester in discussion-counseling sessions for a credited course in which they were advised to participate.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Statistically significant gain in GPA for the experimental group; probationary students not receiving counseling either maintained poor grades or were worse.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>S. Church 1970 Arizona State University Dissertation</td>
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<tr>
<td>-------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Ascertained the effects of a short-term academic rehabilitation seminar which was semi-structured in nature.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Full-time sophomore students on academic probation who volunteered.</td>
</tr>
<tr>
<td></td>
<td>N=28 (experimental 14; control 14)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Mainly discussed effective study methods, analyzed individual learning and study problems, and problems of achievement; included brief general outline of group meetings.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Eight one hour sessions held once weekly generally following a discussion/semi-structured format.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>No statistical differences in academic achievement, in study habits and attitudes or in self-adjustment although students evaluated program as valuable.</td>
</tr>
</tbody>
</table>
TABLE II, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>R. Hutchinson 1970 Johnson State College, Vermont Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Tested the effectiveness of a study skills course primarily using notetaking techniques.</td>
</tr>
</tbody>
</table>
| STUDENT DESCRIPTION| Volunteer freshmen students on academic warning were matched with remaining volunteers on four variables.  
N=60 (experimental N=30, control N=30) |
<p>| PROGRAM CONTENT    | Consisted of demonstration and application of basic skills in notetaking; taped classroom lectures by actual teachers used as practice; complete description of content not included. |
| PROGRAM OPERATION  | Volunteers agreed to meet for 12 classroom hours; other operational factors were not described. |
| PROGRAM EFFECT     | Statistically significant differences between mean GPA scores favoring the experimental group were found; no significant effects were found in study habits and attitudes; suggested that study assistance may come too late to reflect change in the semester. |</p>
<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>M. A. Keetz 1970 Philadelphia College Pharmacy and Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Investigated the effectiveness of a reading and study skills program for students taking courses requiring quantitative reasoning.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Freshmen with low GPA who had previously failed one or more subjects. N=53 (experimental N=26 and control N=27)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Reading and study skills were taught and practiced using students' texts primarily; no additional description of content included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Individualized and group sessions met for 13 times; no additional descriptions were included.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>No significant differences were found, however, tests appeared to measure rate not level of comprehension; students read slowly in scientific materials. Study examined rate and GPA for one semester of the study.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>S. Anthony 1971 University of Pittsburgh Dissertation</td>
</tr>
<tr>
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<td>-------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>A study skills course and a self-understanding course were compared for their effect on grade point averages, study habits and attitudes.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Both freshmen and sophomore low achieving women students on academic probation were divided into two type groups: those who lacked study proficiency and those with self-identity difficulties. N=61</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>(1) Study skills topics were adapted from Robinson's SQ3R. (2) Self-understanding techniques and topics adapted from Malamud and Machover's criteria of need. Outlines included in appendix.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Both 8 week programs involved small group sessions and student participation in discussion; lecture and demonstration techniques used. Uncertain if program was voluntary or required.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Both type I and II students showed a significant increase in grade point averages; type I students showed a significant increase in study habits only.</td>
</tr>
</tbody>
</table>
### Table II, Cont.

<table>
<thead>
<tr>
<th>Study Description</th>
<th>R. Kaye 1971 University of Connecticut Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Major objective was test effectiveness of a combined/integrated treatment-program using individual counseling, group guidance and academic skills training.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Freshmen students continuing in the university with deficient grades required to participate.</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Study skills included listening and notetaking, efficient reading, writing themes and papers, reading texts, etc. Brief topical outlines for all 3 procedures provided.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Students met 10 weeks, three times weekly for each procedure, one hour of each treatment each week; credit status of program not given.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Experimental group achieved statistically higher mean GPA participation in the treatment; program increased students chances of being continued at the university.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>Ritter 1971 Counseling Service-Clinic at University of Manitoba Paper</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Deficient</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>A course that emphasized study skills.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Assumed to be students at the university but uncertain.  N=149</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Included (1) listening and taking notes, (2) underlining, (3) skimming, (4) preparing study sheets, (5) exam taking and (6) essay writing. Limited content description included but appeared to be supportive in nature.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>A 5 week course; other operation factors uncertain or not described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Of the 400 students who participated, most &quot;felt&quot; the underlining and study sheets were most helpful; GPAs of students indicated a significant change after participation.</td>
</tr>
</tbody>
</table>

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133 Eugene S. Wright, "An Investigation Into the Effect of Reading Training on Academic Achievement Among Freshmen in the College of Agriculture, Forestry and Home Economics," (Unpublished doctoral dissertation, University of Minnesota), University Microfilms, Ann Arbor, Michigan, 1960, 61-685.


135 Feinberg, Long and Rosenheck, loc. cit.

136 Long, loc. cit.


139 Nikas, loc. cit.

140 Fauk, loc. cit.


142 Gerber, loc. cit.


147 Trautwein, loc. cit.

148 Robert D. Wilson, "The Influence of the Effective Study Course at the University of Mississippi Upon Academic Achievement," (Unpublished doctoral dissertation, University of Mississippi), University Microfilms, Ann Arbor, Michigan, 1968, 68-14,355.

In four of the twenty-six studies adequate content descriptions were given to enable other investigators to follow the treatment with understanding. (Foxe (1966), Trautwein (1968), Herman (1972), and McHargue (1975)). Very brief descriptions were included by E. Wright (1960), Long (1962), Olson, Sanford and Ohnmacht (1964), Risenmay (1965), Gerber (1966), Stebens (1967), Swindle (1968), Belcher (1971), Brandt (1975), Tomlinson and Tomlinson (1975) and Hunter

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154 McHargue, loc. cit.

155 Brandt, loc. cit.


157 Margaret J. Hunter, "The Effect of Speed Reading and College Reading/Study Skills Instruction on Grade Point Average," (Unpublished doctoral dissertation, University of Northern Colorado), University Microfilms, Ann Arbor, Michigan, 1975, 75-23,314.

158 Eanet, loc. cit.
Deficiencies in content descriptions have been noted by other investigators. After his review of the content descriptions in other studies, Herman set this goal for himself: 159

As noted in the preceding chapter of this study, specific details concerning the methods and materials of instruction often have been haphazardly reported in the literature. It was the intent of the investigator to provide enough detail in this study so that a reader could readily determine what specific materials were used in the program and what methods of instruction were employed.

Herman's study was unusually complete in regard to the content, methods and materials utilized, providing other investigators with references and specific details of course content for each lab or class session, as well as goals for each class period.

Eight of the twenty-five programs claimed to have given attention to word attack and vocabulary training, compared to nineteen which gave attention to instruction in reading rate or flexibility, and sixteen which emphasized comprehension and study skills with some overlapping. One study, (E. Wright, 1960) identified itself as a remedial program but provided evidence to the contrary in terms of student population as well as course content. For this reason it has been included with developmental programs. The majority of freshmen enrolled in E. Wright's credit

159 Herman, loc. cit., pp. 57.
Communications Course graduated in the upper fifty percent of their high school class. 160

The content factors of all Developmental Programs located in this study have been summarized in Table III.

Considerable emphasis in Developmental Programs was given in fourteen programs to Reading Rate, Reading Flexibility and/or Reading Efficiency training. McHargue 161 reported that reading efficiency training for high-achieving college populations was a high student priority at Stanford; a survey taken there indicated the most important student felt learning need was the development of a system which would teach students to read college materials more efficiently. This concept has been supported by the narrative reports of Harvard's developmental reading program reported previously in this investigation.

Of the studies which gave particular attention to college comprehension skills, several specifically mentioned instruction in "critical reading skills" but these terms were not defined. For definition, this investigator consulted the reading text authored by Harris and Sipay who devoted considerable attention to a review of the whole issue of reading comprehension, particularly considering the nature of

160 E. Wright, loc. cit.

161 McHargue, loc. cit., pp. 17.
comprehension.\textsuperscript{162} Citing the factorial analysis studies of comprehension by Davis (1972),\textsuperscript{163} Harris suggested that at senior high level the following subskills of reading comprehension were identifiable: recalling word meanings, drawing inferences about a word from context, getting the literal meaning of details, weaving together ideas in the content, drawing inferences from content, and recognizing an author's purpose, attitude, tone, mood, and techniques. As in many other aspects of reading, considerable debate has resulted over the Davis research. Numerous researchers have attempted to identify the subskills of comprehension in some systematic, logically sound hierarchial arrangement. While cautioning that there has not been agreement over these skills among researchers, Harris nevertheless, suggested the following possible subskills are pertinent to college instruction: (1) reading for the main idea, (2) reading to note and recall details, (3) reading to find answers to specific questions, (4) reading to follow a sequence of events, (5) following printed directions, (6) grasping the author's plan, (7) remembering, and (8) developing critical reading ability.\textsuperscript{164} This latter skill he suggests involves

\begin{itemize}
  \item[\textsuperscript{163}] F.B. Davis, "Psychometric Research on Comprehension in Reading," \textit{Reading Research Quarterly}, Summer 1972, 7, 628-678.
  \item[\textsuperscript{164}] Harris and Sipay, loc. cit.
\end{itemize}
comparison of two or more sources of information or contradictory sources, considering new ideas and knowledge, detecting propaganda or bias. Chaplin and Raven suggest this ability is related to formal operational thought processes as defined by Piaget, and may reflect limitations in logical thinking development as well as reflect practical implications to college reading instruction.

At least two of the texts referred to in the content descriptions of developmental programs, appeared to rely upon a concept of reading comprehension as other than a unitary skill. One commercially available system has published eight programmed student books which consider reading development to include the following subskills: Efficient Rates, The Main Idea, Significant Facts, Organization, The Main Idea in Science, Critical Reading, Study-Type Reading, and Skimming and Scanning. The Study Skills of this same system include Problem Solving,


In Fairbank's analysis of seventy-nine studies investigating the relationship between college reading improvement program effect on academic achievement, she found only four of twenty-eight skills were reported in more than twenty of the sixty-nine treatments examined. She recommended that special care be taken in college reading programs to diagnose for difficulty in the following comprehension skills: reading for the main ideas, recognizing and understanding inferences, differentiating between fact and opinion.

---

<table>
<thead>
<tr>
<th>Control Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate</td>
<td>Good research design</td>
</tr>
<tr>
<td>Moderate</td>
<td>Minor limitations</td>
</tr>
<tr>
<td>Deficient</td>
<td>Serious design problems</td>
</tr>
</tbody>
</table>

**TABLE III**

SUMMARY OF DEVELOPMENTAL PROGRAMS

1960 - 1977

26 STUDIES  POPULATION N=6,749
<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>E. Wright 1960 University of Minnesota Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Determined the effects of a reading improvement course on reading performance and academic achievement.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Freshmen scoring in the bottom 75 percentile in reading were randomly assigned to either experimental or control groups.</td>
</tr>
<tr>
<td></td>
<td>N=215 (experimental N=108, control N=107)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Course was part of a total freshman communication program; tests determined sequence of instruction designed to develop command of 4 skills—reading, writing, speaking and listening.</td>
</tr>
<tr>
<td></td>
<td>Goals listed and description included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Experimental students were required to enroll in the 3 unit credit course for 2 quarters; 30 hours of instruction included diagnosis; students were informed and participated in their progress.</td>
</tr>
<tr>
<td></td>
<td>Description included.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Extensive analysis included 4 aspects of reading performance, comparing students in 3 major divisions of the college; experimental students made significantly more gain in rate and vocabulary. Students in Agriculture and Forestry and in Home Economics exceeded controls in comprehension; reading gains tended to persist beyond the period of study.</td>
</tr>
</tbody>
</table>
### TABLE III, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>R. H. Bloomer 1962 State University, College of Education, New York Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Investigated the effects of reading program upon academic achievement, and the relationship between achievement and reading ability gains.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Random sample of Education freshmen (not matched).</td>
</tr>
<tr>
<td></td>
<td>N=80 (experimental N=40, control N=40)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Experimental students worked individually on specially prepared reading exercises; content factors not described.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Experimental students received 24 hours instruction, 2 one hour sessions weekly for 12 weeks; other operation factors not described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Experimental groups made significant gains over controls in rate and comprehension; controls made greater gains in vocabulary; no differences in achieved GPA at end of semester noted; however, highly significant gains in corrected scores for experimental group, and fewer dropouts found.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>Feinberg, Long &amp; Rosenheck 1962 New York City College, Baruch School of Business and Public Administration Paper</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Deficient</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Mandatory study skills course to determine if such skills could be improved.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>All entering freshmen. N=uncertain</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Study skills and reading were emphasized. Description of materials, topics, techniques were not included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Students were required to attend 1 hour lab weekly for a no credit course; other factors not included.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Concluded that best results are secured when students recognize their own need for training; negative response to instruction and testing apparently invalidated all tests and retests.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>R. Long 1962 University of Oklahoma Dissertation</td>
</tr>
<tr>
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</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Tested the effectiveness of a printed materials centered approach vs. a machine centered approach for improving reading rate of college students.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Undergraduate students voluntarily enrolled in 2 methods of a reading improvement course were compared to students not enrolled. N=142</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Certain basic content used in both groups; skills for printed materials included various eye-span, word recognition exercises, skimming and phrasing; machine group used rate drills and exercises in comprehension. Materials listed and described briefly with examples.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Students met twice weekly for 8 weeks and paid a fee equivalent to one unit but did not receive credit.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>The two methods were equally effective for improving reading rate and comprehension; printed materials appeared to be more effective in improving comprehension; either method demonstrated greater gains in rate and comprehension than students without instruction.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>C. Beasley 1964 Eastern Tennessee State University Dissertation</td>
</tr>
<tr>
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<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>A reading program to determine if students achieve any significant and lasting gains following instruction.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Freshmen enrolled in English 100, a freshmen reading course. N=144</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Reading proficiency and attitude toward critical reading task were considered as most pertinent factors; description of the program included listing topics and major emphasis. Interesting analysis of students' evaluation of course content.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Students met 3 times weekly in groups of 20 for general discussions of skills and 2 times for individual lab work.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Program resulted in significant and lasting gains in rate, vocabulary and comprehension; more initial and residual gains were made by students in upper 25th percentile than lower; greater gains were made in comprehension than any other skill.</td>
</tr>
</tbody>
</table>
### TABLE III, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>Olson, Sanford &amp; Ohnmaacht 1964 University of Maine Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Evaluated the effectiveness of training in reading and study skills in orientation program.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>All freshmen students enrolled in College of Education were compared to the freshmen class on another campus.</td>
</tr>
<tr>
<td></td>
<td>N=319 (experimental N=145, control N=174)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Content listed by discussion topics; some materials also included. Lessons included rate and flexibility, main ideas and details, underlining and SQ3R; limited description included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Program met on alternate weeks for 8 weeks once a week; other operational factors uncertain.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Control was superior to the experimental group at start of instruction, but experimental group achieved (test) parity in both comprehension and rate but not in vocabulary.</td>
</tr>
</tbody>
</table>
TABLE III, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>Nikas 1965 State University College of New York Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Deficient</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Compared a developmental teacher oriented reading class to a machine oriented class, both taught at college level by the same instructor but at different semesters.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Upperclassmen. N=36</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Teacher oriented class received demonstrations of techniques for effective reading improvement; machine oriented class saw prepared films including lessons on comprehension, plan and purpose, intensive and critical reading, skimming and scanning, et al.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Both sections attended class 2 times weekly for a full semester; other operational factors uncertain.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Author notes some apparent limitations to the study; no significant differences found between groups.</td>
</tr>
</tbody>
</table>
TABLE III, CONT.

<table>
<thead>
<tr>
<th>STUDY</th>
<th>Description</th>
<th>Fauf 1965 Cornell Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: not enough information to adequately evaluate.</td>
<td></td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>A brief 6 week study skills course was compared to a longer 14 week speed-study-comprehension course.</td>
<td></td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>College students reportedly matched (after instruction) on sex, year in school, and SAT scores.</td>
<td></td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Study skills course included how to master a text, and OK4R study system (which includes &quot;reflection&quot;), notetaking, et al; speed-study course included speed reading plus study skills (same as in brief course) and comprehension. Narrative but limited description of content factors.</td>
<td></td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Operation factors uncertain.</td>
<td></td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Statistical data was referred to but not included in the narrative account; statistically significant results favoring the study skills group in GPA terms was reportedly found, but statistics were not given.</td>
<td></td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>J. Risenmay 1965 Brigham Young University Dissertation</td>
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</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
<td></td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>A study counseling program using peer-group leaders to improve academic adjustment.</td>
<td></td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Freshmen students living on campus in residence halls.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N=647 initially but final N=324 (147 experimental and 177 control)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Groups were not equated.</td>
<td></td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Upper division student-counselors were selected and trained for 30 hours, then led a survival orientation course emphasizing study skills and test interpretation in small groups.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Some brief description of content was included.</td>
<td></td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>A ratio of approximately 1 counselor for 8 students met weekly sessions for a total of 5 to 6 hours.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other operation factors uncertain.</td>
<td></td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Student knowledge of study skills was higher on retest, but whether or not this knowledge reflected actual practice was unknown; persistence in school and higher GPA for the control group, contrary to predicted outcome (High mortality noted).</td>
<td></td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>Gerber 1966 Weber State College Dissertation</td>
<td></td>
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<tr>
<td>-------------------</td>
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<td></td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
<td></td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Attempted to determine experimentally which of four alternative orientation study methods showed a marked superiority.</td>
<td></td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Freshmen enrolled at Weber State College. N=732</td>
<td></td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Orientation course included: study skills, choice of major, knowledge of rules and regulations; topical outline included.</td>
<td></td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Lectures were provided and the &quot;traditional course&quot; received credit; operational factors were uncertain or not described.</td>
<td></td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Formal classes limited to a relatively small size were more successful communicating rules and regulations than larger classes or no program; grade performance results were conclusive.</td>
<td></td>
</tr>
</tbody>
</table>
### TABLE III, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>E. Foxe 1966 University of Maryland Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Investigated the effects of a brief study skills program in chemistry when ability and motivation were controlled.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Freshmen students who completed Chemistry 1 and volunteered were compared to students who were not given opportunity to participate.</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>N=297 (experimental N=73, control N=224)</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Lectures given including use of time, use of tests, listening and notetaking, concentrating and remembering, and taking exams; brief summaries of all six sessions were given and instruments and materials for all sessions included.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Six 1 hour sessions with 10 to 18 students listened and practiced the skills discussed; other operational factors uncertain.</td>
</tr>
<tr>
<td></td>
<td>Students in experimental group were significantly better on post-test measures of vocabulary combined with comprehension; experimental group found to be significantly more anxious than comparison group.</td>
</tr>
</tbody>
</table>
### TABLE III, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>L. Stebens 1967 Oklahoma State University Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Purposed to determine benefits derived by participation in reading improvement program in terms of retention of gains in reading skills over time; also questioned gains experienced by non-participants, GPA, and academic performance.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Entering freshmen enrolling voluntarily in the course were compared to an equivalent group of non-participants.</td>
</tr>
<tr>
<td>N=216 (experimental N=108, control N=108)</td>
<td></td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Various exercises to develop study skills, comprehension and vocabulary were used; instruments, kits and tests were included and brief explanation of content.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Classes meet for 30 clock hours over 9 weeks; fee charged but no credit given; discussion and practice sessions provided and both small group and individualized instruction given.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Participation resulted in significant improvement in academic achievement and in reading rate which were retained over a 5 semester period; students who did not receive training also improved in reading skills.</td>
</tr>
</tbody>
</table>
TABLE III, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>Maxwell and 1968 University of Maryland Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: None</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>A satellite lab set in operation at request of the sorority as a voluntary self-help program.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Women students at the Delta Phi Epsilon sorority house.</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Equipment placed in the lab included a Controlled Reader, Tachistoscope, tape recorder and tapes and SRA kits.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>It was to have been voluntary self-help program with flexibility of hours and some counseling assistance available weekly, but service was not used; intended operational factors uncertain due to lack of usage.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Only 3 or 4 girls briefly used the equipment; a questionnaire on usage was tabulated and attitude survey conducted; equipment removed after 10 weeks.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>Swindle 1968 Texas A &amp; M Dissertation</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>An evaluation of the benefits of a study-learning course upon subsequent academic achievements.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Undergraduates enrolled in a techniques of learning course were compared to undergraduates in diversified career pursuits; primarily male population but open to all interested students.</td>
</tr>
<tr>
<td></td>
<td>N=1252 (experimental=626, control=262)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>The credit course attempted to clarify and develop mature motivational patterns and higher level study skills as well as improve reading rate and comprehension; brief description was included; contents suggest developmental concept.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Methods included lectures, assigned readings, standardized group testing and supervised laboratory work; specific operation factors uncertain.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Using cumulative grade point ratio to measure the effect of instruction, a significant difference was found indicating students who participated in the course &quot;had a better chance of continuing their college education;&quot; definite effect on attrition was identified.</td>
</tr>
</tbody>
</table>
### TABLE III, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>M. Trautwein 1968 University of Minnesota Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Comparison of two approaches: counseling and orientation vs. orientation alone as conducted in a General Psychology class framework to improve reading efficiency and study behavior.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Randomly drawn freshmen.</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>N=67 (some students elected not to take part).</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Semester orientation class discussed study habits and attitudes, reading rate and comprehension, and practiced these skills; psychology class applied skills to coursework, and included various motivational devices.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Classes met once and twice weekly generally using a lecture-demonstration format. [Course syllabus included: 235 pps.]</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Students expressed satisfaction with training, but no significant differences in reading speed and comprehension or study habits as measured at any of three spaced-time period were identified.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>R. Wilson 1968 University of Mississippi Dissertation</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Compared academic achievement of Liberal Arts students who took the effective study course in years 1963, 1964 and 1965 during their freshmen year.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Freshmen Liberal Arts students who took course were compared to a matched group who did not take course.</td>
</tr>
<tr>
<td></td>
<td>N=336 (experimental N=168, control N=168)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>The two-hour credit course covered notetaking, time scheduling, study skills; standardized testing, participation in a reading laboratory and individual counseling; brief content description.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Group discussions were held but other operational factors were not described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Higher mean GPA was achieved by the control group but it was not statistically significant; students from lower academic levels appeared to profit more from the course.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>R. Sawyer 1969 University of Missouri-Rolla Paper</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Investigated success of developmental reading program and the effect of reading instruction and counseling on GPA and attrition rate; specifically the relationships between specialized instruction and academic progress were examined.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Beginning freshmen students in engineering and science with above average quantitative skills and below average verbal skills were matched on 5 variables.</td>
</tr>
<tr>
<td></td>
<td>N=90 (experimental N=30, control I &amp; II, N=30 each)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Basic reading materials were Miller's workbook Increasing Reading Efficiency supplemented with mechanical devices and Robinson's SQ3R study techniques; other content factors not described.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Students volunteered for a one hour, no credit, bi-weekly program; counseling sessions also available; other operation factors not described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Reading rate and comprehension gains for experimental students were highly successful; attrition rates for experimental group were reduced; GPA differences in favor of experimental group leveled off after second semester.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>R. Sawyer &amp; L. W. Martin 1969 University of Missouri-Rolla Paper</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Same study reported by R. Sawyer, 1969.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>L. Stebens &amp; B. Belden 1970 Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Same study reported by L. Stebens, 1967.</td>
</tr>
</tbody>
</table>
### TABLE III, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>E. Chandler 1970 Michigan State University Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>A short term 17 day orientation program designed to improve academic achievement, persistence in college and participation in activities was conducted at a summer camp and on the campus.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Freshmen who participated were compared to those who did not.</td>
</tr>
<tr>
<td></td>
<td>N=1,492 (738 participants and 754 non-participants)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Academic content description was not included although study skills orientation was listed as having been taught.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Trained peer-group leaders and counselors conducted a week of orientation meetings and activities in an informal setting; other operational factors not included.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>A difference in grade point averages favoring participants was found. Non-participants had greater number of dropouts and less involvement in activities; 96% of students recommended participation.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>Belcher 1971 Pacific Lutheran University Paper</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Students enrolled in a study skills class or a developmental reading class were compared to students not enrolled in such courses.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Full-time undergraduate students who were enrolled in either the reading or study skills course were compared to randomly selected control group.</td>
</tr>
<tr>
<td></td>
<td>Total N=355 (experimental N=40; control N=314)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Reading emphasis course used EDL* materials as well as programmed vocabulary, efficient reading text. Fewer students in study course received more individualized attention and had more discussions.</td>
</tr>
<tr>
<td></td>
<td>Limited description of content.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>One group met daily for 4 weeks; group B met twice weekly for 4 months. Credit was on a pass/fail basis.</td>
</tr>
<tr>
<td></td>
<td>Other operation factors not described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Both groups increased their effective reading rates significantly, but no significant differences in GPA were identified.</td>
</tr>
</tbody>
</table>

*Educational Developmental Laboratory, a McGraw-Hill subsidiary.
### TABLE III, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>W. Bryan 1971 University of Kentucky Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Determined the effectiveness of a developmental course on reading rate, comprehension and efficiency and the permanency of effect; considered GPA and dropout rate also.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Female freshmen nursing students randomly assigned to experimental or comparison groups. N=84</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Supplemental and developmental lessons were taught but no description of course content was given.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Students met once weekly for 2 hours for 10 weeks. Other operational factors were uncertain.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Experimental group improved significantly on mean rate and efficiency scores but had a significant loss in comprehension; no significant differences were found in GPA or dropout rates.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>J. E. Herman 1972 University of Connecticut Dissertation</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Determined effects of intensive 6 week college reading improvement program on rate, comprehension and cumulative quality point ratio over a 14 month period.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Matched pairs of freshmen and sophomores were randomly selected from population enrolling voluntarily. N=80 (42 freshmen and 38 sophomores)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Complete description of instruction and content included; speed and comprehension were emphasized using text and instrument materials; techniques included (1) SQ3R study, (2) pre-reading, (3) marginal reading, (4) key-word reading, (5) space reading. Complete syllabus and plans included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Six week sessions for group and individuals met twice weekly for 2 hours; description included.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Program affected the reading comprehension, speed and CQPR in a positive manner; increases were retained over time measured; highly significant differences in speed and comprehension found and cumulative effect on academic achievement for experimental group noted.</td>
</tr>
</tbody>
</table>
STUDY DESCRIPTION | M. McHargue 1975 Stanford University Dissertation
---|---
RESEARCH CONTROL | Rating: Adequate
PROGRAM OBJECTIVE | Developed and tested three reading program operations; developed practical applications for self-managed reading technology using reading efficiency as the measure of academic reading tasks.
STUDENT DESCRIPTION | A cross-section of academically talented Stanford students who voluntarily participated in the course.
| N=108 (T₁=28, T₂=27, T₃=28, control=24)
PROGRAM CONTENT | Three one unit credit courses were offered: (1) Classroom-based focused on academic reading rate and comprehension; (2) Self-managed completed the same tasks but at individual pace; (3) Self-paced completed same tasks without self-control directions.
PROGRAM OPERATION | Operational factors differed for each treatment and were described in the study. All three treatments were one unit credit courses lasting one semester.
| [Complete syllabus and description included]
PROGRAM EFFECT | Post-test reading efficiency means of the 3 treatments were not significantly different from each other, but all three were significantly higher than control group. More students completed the Classroom-based treatment.
<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>J. D. Brandt 1975 Ohio State University Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Investigated performance of two reading rate instructional methods as associated with personality factors.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Volunteer students from study skills classes agreed to participate in summer reading improvement course.</td>
</tr>
<tr>
<td></td>
<td>N=55 (T₁=11, T₂=12, T₃=12, T₄=10, control=10)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Controlled approach included kits, instruments and interesting reading material at steadily increased rates with 70% comprehension; Motivated approach used warmup drills, and increased rates according to instructor signals.</td>
</tr>
<tr>
<td></td>
<td>Brief description provided of content.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Each group met 2 times weekly for 1 hour for 5 weeks in groups of 10 to 12. Other operational factors briefly described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Groups receiving motivated instruction increased their rate significantly more, but personality dimensions were not supported.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>B. Tomlinson &amp; M. Tomlinson</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Adequate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Adjunct course organized around an introductory Biology course to teach necessary reading and study skills.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Students who voluntarily enrolled in the course.</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>N=104 (Adjunct=59, Non-adjunct=45)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Integrated reading and study strategies with content, included surveying techniques, comprehension and vocabulary development through content and systematic study; included a lecture review; brief description of content included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Voluntary non-credit class met three times weekly for 8 weeks; other operational factors described briefly.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Students enrolled in the adjunct course received significantly higher scores on the mid-term than the control group.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>M. Hunter 1975 University of Northern Colorado Dissertation</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Investigated changes in grade point averages for students enrolled in either speed reading classes or study skills classes.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Two groups of students were matched with year of school, sex and composite ACT scores. One group was enrolled in speed reading, one in study reading. N=54 (27 in each group)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Catalog-type description of courses given; Reading/study stressed study and flexibility and was not remedial in nature; Speed reading stressed rate and flexibility. Differences between courses were uncertain and content description limited.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Both courses offered 2 hours credit, but all other operational factors uncertain.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Changes in GPA pre and post participation, fall to spring quarter were calculated; instruction in both areas appeared to influence GPA although changes were not significant. Speed reading students improved more than Study students.</td>
</tr>
</tbody>
</table>
TABLE III, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>M. Eanet 1976 University of Missouri-Kansas City Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Moderate</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>A formative and evaluative study of a new study procedure (REAP) using ability to write annotations as a key element was compared to Robinson's SQ3R method.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Volunteer undergraduate students enrolled in a Developmental Reading course were assigned to experimental or control sections, then random assignments of methods were made. N=105</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Samples of the content and general explanations were given. REAP translates as Read, Encode, Annotate, and Ponder; content factors uncertain.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>More instructional time was spent learning procedure, writing, and practicing, but course included 6 weeks of testing and instruction; operation factors uncertain.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>The assessment procedures used did not support effectiveness of REAP or SQ3R. The amount of familiarity time needed to acquire efficient study techniques may be underestimated.</td>
</tr>
</tbody>
</table>
Course Content of Unclassified Studies. Of the sixty-six studies reviewed, seven did not supply sufficient information about their population to allow the investigator to classify the study. Parker (1963), Rose (1964), Draper (1965), Ray (1965), Kelly and Mech (1967), Scheller (1967), Mattern (1972).

Content factors for three of these studies were provided in only a limited way. Parker's (1963) popular course was open to any student at the University of North


173 Inga Kelly and Dorothy Mech, "The Relationship Between College Reading Laboratory Experience and Gains in College Grade Point Average," (Journal of the Reading Specialist, Reading World, Vol. 7, No. 2, 1967.)


175 Patrick M. Mattern, "Natural Reading Rate Training and Psychological Correlates of Success," (Unpublished doctoral dissertation, Syracuse University), University Microfilms, Ann Arbor, Michigan, 1972, 73-9546.
Carolina willing to pay the $2.00 fee. He emphasized word attack, mechanics of rate, comprehension and study skills. However, only an outline of the course was provided in his dissertation, and the specific materials used were not included. 176 Rose's (1964) program was offered to students volunteering in response to a notice and included lessons from SRA Lab IV, but no further descriptions were provided. 177 Ray's (1965) report briefly described content factors as an "eclectic approach." 178 A summary of content descriptions of Unclassified Studies has been included in Table IV.

176 Parker, loc. cit.
177 Rose, loc. cit.
### TABLE IV

**SUMMARY OF UNCLASSIFIED PROGRAMS**

1960 - 1977

7 STUDIES POPULATION N=684

---

**Control Rating:**

- **Adequate** = Good research design
- **Moderate** = Minor limitations
- **Deficient** = Serious design problems
TABLE IV

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>W. Parker 1963 University of North Carolina at Chapel Hill Dissertation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Deficient</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>An individualized, voluntary, non-credit reading program.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Any enrolled student in the university. Actual N=123 (150 students volunteered from 717 total enrollees)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Emphasis given to rate, comprehension, study habits, vocabulary and spelling. Limited content description included and nature of program uncertain.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Diagnostic testing and individualized instruction apparently enhanced acceptance of this 9 week program; 3 meetings per week; fee $2 charged.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Median gains and percentages of change indicate students made gains in rate and comprehension; gains were not stable 5 months after conclusion of the course, but did reflect gains over entry rate; little or no relationships found between rate, comprehension and GPA.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>H. Rose 1964 University of Kentucky Paper</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Deficient</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Assessed whether classes in reading improvement were beneficial and worthwhile to students and could be conducted inexpensively and simply at a large university.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Volunteer students. N=76</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>SRA Lab IV was used as course content and included only a sampling of listening and notetaking exercises. Limited description of content factors.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Classes met in small groups twice weekly for one hour. Limited description of operation factors.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Improvement in both speed and comprehension attained by majority of students, even those directed by inexperienced teachers.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>M. Draper 1965 Indiana University Dissertation</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Deficient</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Investigated the interrelationships of learning style to reading achievement and academic adjustment.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Second semester freshmen voluntarily enrolled in Education X100, a Reading-Study course. N=97</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>No description of content facts was given: &quot;each instructor conducted semesters' work using methods and materials he considered appropriate...&quot; (pp. 50)</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>No description of operation facts was given: &quot;each instructor conducted semesters' work using methods and materials he considered appropriate...&quot; (pp. 50)</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Findings indicate the scale used to determine learning style do not conclusively differentiate students according to reading achievement and academic adjustment; instrument may be useful for self-understanding.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>Ray 1965 University of Oklahoma Paper</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Deficient</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>A program designed to improve all types of reading proficiency.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Students at the university enrolled in the reading improvement course who voluntarily returned for retesting. N=65</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Included lectures devoted to all types of reading and to the development of a flexible approach to reading materials; actual content factors uncertain although described briefly as an &quot;eclectic approach.&quot;</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Participants met 30 clock hours; other operation factors uncertain or not described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Retest results after 3 and 6 months indicated when significant gains were made, they were retained without significant loss in rate, comprehension or vocabulary skills.</td>
</tr>
</tbody>
</table>
TABLE IV, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>Kelly and Mech 1967 Washington State University Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Deficient</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Explored the relationship between attendance at a college reading improvement lab and academic performance over a period of 3 semesters.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Selected reading lab participants were matched to non-participants on basis of predicted GPA.</td>
</tr>
<tr>
<td></td>
<td>N=46 (23 matched pairs)</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>No description of content factors given.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>No description of operation factors given.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Preliminary study indicated no significant differences between GPA of groups by ability or major; however, science and math majors and education majors enrolled in reading showed a statistically significant difference in cumulative GPA after 3 semesters; suggests further study needed.</td>
</tr>
</tbody>
</table>
TABLE IV, CONT.

<table>
<thead>
<tr>
<th>STUDY DESCRIPTION</th>
<th>T. G. Scheller 1967 University of Minnesota Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Deficient</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Studied the effects of instruction in college reading particularly as reflected by changes in reading scores and GPA.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Random sample of freshmen enrolled in educational skills course compared to random sample of non-enrollees. N=220</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>No description of content factors was included.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>No description of operational factors was included.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>Experimental group was &quot;favored&quot;, but differences were not significant; students improved speed, comprehension and vocabulary. Study neglected to give post-test to control group so data of change without instruction was not collected.</td>
</tr>
<tr>
<td>STUDY DESCRIPTION</td>
<td>P. Mattern 1972 Syracuse University Dissertation</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>RESEARCH CONTROL</td>
<td>Rating: Deficient</td>
</tr>
<tr>
<td>PROGRAM OBJECTIVE</td>
<td>Attempted to identify a superior method of accelerating reading rate using both a structured and an unstructured course; non-projective personality test information was also gathered.</td>
</tr>
<tr>
<td>STUDENT DESCRIPTION</td>
<td>Volunteer students enrolled at the university who paid nominal fee (high mortality noted). N=57</td>
</tr>
<tr>
<td>PROGRAM CONTENT</td>
<td>Structured rate improvement used Sack-Yourman materials to explain, examine, practice new skills; unstructured course examined a number of approaches and practiced any combination that appeared to be efficient. Limited content descriptions.</td>
</tr>
<tr>
<td>PROGRAM OPERATION</td>
<td>Ten contact hours in five weeks which utilized discussion and practice of two techniques in groups of 11-20; other operational factors not described.</td>
</tr>
<tr>
<td>PROGRAM EFFECT</td>
<td>No personality characteristics correlated significantly with the ability to profit from rate instruction; there was significant advantage for students in structured course; concluded that college students can be taught to read faster in a 10 hour program.</td>
</tr>
</tbody>
</table>
Summary of Course Content Factors. Program Content in this section was separated into four divisions: Corrective Programs, Academic Support Programs, Developmental Programs, and Unclassified Programs. Content descriptions in all of these categories were found to be inadequate and non-specific with only a few notable exceptions. Corrective Programs tended to provide lessons in vocabulary, reading skills, comprehension and study skills. Supportive Programs indicated a tendency to utilize study skills and counseling approaches. Developmental Programs tended: (1) to report content in more detail, although still inadequate for replication and analysis purposes, (2) to give attention to critical reading-comprehension skills and subskills, and (3) to provide reading rate and/or reading flexibility instruction. Seven studies did not provide adequate descriptions of their student population to permit classification and for this reason were considered in an Unclassified Program category.

Reports of Course Operational Factors

The sixteen Program Operational Factors considered in this section have been described in Chapter 1 on page 12 of this study. These factors, which were identified in the Fairbanks study and are reviewed in this section were related to: (1) the length of instruction, (2) use of class time, (3) group or individualized approach and size of group, (4) credit or non-credit status, and (5) voluntary or required basis for enrollment. A summary of reported Operational
Factors has been included in Tables I, II, III and numerically summarized in Tables IV and V.
### TABLE V

**SUMMARY OF PROGRAMS**

<table>
<thead>
<tr>
<th>TABLE</th>
<th>PROGRAM TYPE</th>
<th>POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>CORRECTIVE PROGRAMS (24 STUDIES)</td>
<td>N=3,926</td>
</tr>
<tr>
<td>II</td>
<td>ACADEMIC SUPPORT PROGRAMS (9 STUDIES)</td>
<td>N=789</td>
</tr>
<tr>
<td>III</td>
<td>DEVELOPMENTAL PROGRAMS (26 STUDIES)</td>
<td>N=6,749</td>
</tr>
<tr>
<td>IV</td>
<td>UNCLASSIFIED PROGRAMS (7 STUDIES)</td>
<td>N=784</td>
</tr>
<tr>
<td></td>
<td>DUPLICATE STUDIES REPORTED (3 STUDIES)</td>
<td>N NOT INCLUDED</td>
</tr>
</tbody>
</table>

**TOTAL** 66 STUDIES  POPULATION N=12,157 Ss
Operational Factors of Corrective Programs. Each investigation was examined for its description of the following factors:

1. Length of instruction: of the twenty-four programs in this category, fourteen reported students participated thirty hours or more; only one program reported fewer than nine hours of instruction.

2. Use of class time: twelve corrective programs reported using the lecture method and ten programs provided opportunity for classroom practice of skills taught.

3. Group size: seven programs reported groups of 11-20 students; only one program reported completely individualized instruction.

4. Credit status: seven programs reported offering some form of credit for corrective work; however, the credit status reported by fourteen programs was uncertain.

5. Enrollment: nine programs required attendance, six reported voluntary enrollment and the enrollment conditions of eight programs were uncertain.

Operational Factors of Academic Support Programs. Greater diversity in descriptions of course operational factors was noted in this category of investigations.

1. Length of instruction: no distinctive pattern of length of instruction appeared in this category.

2. Use of class time: seven studies reported predominate use of lecture method; however, all other factors in this category were uncertain.
3., 4., 5. No distinctive pattern was apparent in size of groups, credit status, or method of enrollment.

**Operational Factors of Developmental Programs.** Trends apparent in the experimental literature describing college reading-study programs open to all students indicated the following patterns.

1. Length of instruction: twelve programs reported twenty or more hours of instruction in the twenty-four studies examined in this category; in eight studies, the hours of instruction were uncertain.

2. Use of class time: seventeen studies did not report use of class time in sufficient detail to categorize; eleven studies indicated the lecture method predominated.

3. Group size: of these twenty-five studies, almost half (twelve) reported group size in less than definite manner; eight studies reported group size between 11-20, and only five studies reported groups larger than twenty-one students.

4. Credit status: reporting in this category did not reveal patterns, although nine studies did report offering credit for participation.

5. Enrollment: fourteen studies indicated participation on a volunteer basis; only four studies indicated required participation however uncertain reporting again limited findings.
Course Content of Unclassified Programs. Nearly all factors were uncertain in these categories. Findings were summarized in Table IV.

Summary of Reports of Operational Factors

Program Operational Factors included: (1) the length of instruction, (2) use of class time, (3) group size, (4) credit status and (5) basis of enrollment. Few programs reported the specific factors called for in the sixteen program operational factors identified by Fairbanks.

Of twenty-four Corrective Programs, two-thirds (sixteen) reported students attended lecture-type courses for more than twenty hours.

Patterns for the ten Academic Support Programs were uncertain.

Within Developmental Programs, lecture and practice methods prevailed and more than twenty hours of participation were utilized in almost half (twelve) of the studies reported.
<table>
<thead>
<tr>
<th>Program Classification</th>
<th>Length of Instruction</th>
<th>Use of Class Time</th>
<th>Practice Time Included</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30 hours or more</td>
<td>20-29 hours</td>
<td>10-19 hours</td>
</tr>
<tr>
<td>1. Corrective Programs (N=24)</td>
<td>14</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2. Academic Support Programs (N=9)</td>
<td>2</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>3. Developmental Programs (N=26)</td>
<td>7</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>4. Unclassified Programs (N=7)</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Program Classification</td>
<td>Group Size</td>
<td>Credit Status</td>
<td>Enrolled</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------</td>
<td>---------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>Individual</td>
<td>0-10</td>
<td>11-20</td>
</tr>
<tr>
<td>1. Corrective Programs (N=24)</td>
<td>1</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>2. Academic Support Programs</td>
<td>0</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>(N=9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Developmental Programs</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>(N=26)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Unclassified Programs</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(N=7)</td>
<td>All other factors</td>
<td>All other factors</td>
<td>All other factors</td>
</tr>
</tbody>
</table>
IV. EMPIRICAL RESEARCH FINDINGS

Numerous experimental studies to determine the effectiveness of reading-study skills instruction have been conducted by doctoral degree candidates and other reading researchers across the nation. Santeusanio\(^{179}\) reviewed this research and concluded that the effectiveness of college reading programs has not been established primarily because of research control methods of the studies reported. Entwisle (1960)\(^{180}\) found participation in college reading programs favored instruction while several more recent reviews indicated mixed findings.\(^{181}\) However Fairbanks' investigation of eighty-seven studies completed since 1930, ranked in terms of research control, found the research quality of college reading-improvement program investigations has improved particularly since the 1950's. The results of adequately controlled studies indicated a successful tendency for students who participated in such programs.\(^{182}\)

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\(^{179}\) Santeusanio, 1974, op. cit., pp. 64.


\(^{182}\) M. Fairbanks, "Relationship Between Research Control and Reported Results of College Reading Improvement Programs," Reading: Convention and Inquiry, (National Reading Conference, 24th Yearbook, Clemson, South Carolina, 1975), pp. 80-93, 85.
This controversy among experts appears to center around the question, "Does reading training correlate with scholastic success?" Previous assumptions by earlier researchers that reading-study instruction improved students' ability to cope with the demands of college reading and study has been subject to challenge. It is interesting to speculate whether the research concerns of any other academic discipline includes as much effort to establish the validity of that discipline, as has the literature of college reading.

The measurements selected to indicate effectiveness, while also subject to debate, have primarily utilized one or a combination of the following factors: (1) changes in raw reading rate and comprehension and/or vocabulary scores; (2) changes in reading efficiency, which was computed by multiplying reading rate times comprehension; (3) changes in grade point average attributed in part to improved reading skills which leads to an assumed increase in academic competence; (4) changes in the withdrawal or attrition rate for the population undergoing reading-study instruction; and (5) combinations of the above factors.

Measurement of program effectiveness has been further confounded by a number of instructional variables such as the twenty-eight program content factors and seventeen program operation factors identified by Fairbanks and discussed previously in this chapter on page 142. A summary of the effects of instruction for all programs reviewed using the
factors listed above was included in Tables I, II, III, IV.

Changes in Reading Rate and Comprehension

One primary area of interest in the studies examined was the investigation of change in reading rate and comprehension. While investigators appear to agree that an increased ability to read rapidly with understanding was a desirable and even essential college skill, they could only assume that students would employ the new skills in academic pursuits. The relationship between the increased ability to read and understand college materials at more effective rates and its subsequent application to academic achievement has been discussed under Changes in Academic Achievement. Investigators pursued inquiries into the effects of rate and comprehension instruction diligently. Generally they sought to answer: Can students be taught to read college text materials faster and with greater understanding?

It is interesting to note that none of the studies reviewed investigated only the effect of reading rate as a factor in developing more effective college readers, but combined both rate and comprehension as determiners of effect. This may suggest some agreement by reading authorities that the physical act of reading words (i.e. speed reading) must operate within the context of understanding, whatever that act of comprehending may be.
Rankin suggests that rate and comprehension are not adequate measures of program effectiveness, and proposed a model of "reading flexibilities" which he believed was related to differences in the difficulty level of materials, differences in readers' psychological state and purpose of reading, or differences in external environment.

Rate and Comprehension Changes in Corrective Programs. Less attention to reading rate gains per se and greater attention to other variables of reading comprehension and study were noted as a trend in corrective program reporting. However, increased reading rate and comprehension were reported by Clark (1963), Rankin (1963), Berger (1966), Regensberg (1966), Carpenter (1971), Ratekin (1971), Swalm and Cox (1971), G. Wright (1973), and Reese (1975).

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183 Earl C. Rankin, "The Measurement of Reading Flexibility: Problems and Perspectives," (Newark, Delaware: International Reading Association, 1974.)

184 Clark, loc. cit.
185 Rankin, loc. cit.
186 Berger, loc. cit.
187 Regensberg, loc. cit.
188 Carpenter, loc. cit.
189 Ratekin, loc. cit.
190 Swalm and Cox, loc. cit.
191 G. Wright, loc. cit.
192 Reese, loc. cit.
Rankin (1963), in an attempt to determine the effects of speed training compared to comprehension emphasis, utilized ninety-six students with poor comprehension. Few of these exceeded the 50th percentile on national reading norms. Contrary to expectations, the speed-emphasis group read significantly faster with no significant differences in vocabulary, comprehension or total reading test score over the comprehension-emphasis group. Rankin suggests one possible cause of poor comprehension may be the act of reading slowly in itself.

Berger (1966). Significant gains in rate and flexibility were made by all four groups participating in the study by Berger, but no gains were made in comprehension. The Paperback Scanning method produced superior results to use of the: (1) Tachistoscope, (2) Controlled Reader and (3) Controlled Pacer for gains in rate.

Carpenter and Sawyer (1971) found that initial reading scores for the experimental reading group were significantly lower than the control group but improved to the extent that they exceeded the control group on reading rate, and differences in vocabulary were no longer significant. These reading rate gains were made with no loss of comprehension.

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193 Rankin, loc. cit.
194 Berger, loc. cit.
195 Carpenter and Sawyer, loc. cit.
Disadvantaged urban students made significant gains in rate, vocabulary, and comprehension in each of three instructional strategies, although large-group, teacher-directed, forced-pace methods produced the most significant gains when combined with individual practice sessions.

Non-significant differences in rate and/or comprehension were reported by Mattila (1960), Phillips (1969), Whittaker (1971), and Colvin (1972). Mattila noted poor environmental factors and motivational influences may have biased her findings. Phillips (1969) reported gains in comprehension for Teacher-guided students over both other treatments and control groups, but these were not significant. She suggested the tests used for evaluative purposes may have been too difficult for the students and consequently may have distorted the findings. Whittaker (1971) found the machine-oriented group appeared to have a slight advantage over the text-oriented group but no statistical differences were identified. However, he did note visual regression tendencies were more prevalent among text-book readers and those who were sporadic readers. Colvin (1972) found so little improvement among four groups

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196 G. Wright (1973), loc. cit.
197 Mattila, loc. cit.
198 Phillips, loc. cit.
199 Whittaker, loc. cit.
using three reading approaches that he discontinued further analysis. 200

Rate and Comprehension Changes in Academic Support Programs. Of the nine programs reported which offered instruction to students on academic probation, and analyzed in this category, only one (Keetz, 1970) 201 utilized reading rate as a partial measure of program effectiveness in this category. Keetz investigated the effectiveness of a reading and study skills program for students enrolled in courses requiring quantitative reasoning. Reading and study skills were taught and practiced with both texts and equipment during group and individualized sessions dealing with specific student deficiencies for the one semester of this study. Students were found to read slowly in scientific materials but no other significant findings were reported. Keetz suggests the tests which were utilized appeared to measure subjects' rate but not their level of comprehension.

Rate and Comprehension Changes in Developmental Programs. In the twenty-six studies reviewed which offered programs of a developmental nature for entering freshmen or general college students, twelve reported gains in reading rate and/or comprehension while only three found no significant differences in this factor.

200 Colvin (1972), loc. cit.
201 Keetz, loc. cit.
Students receiving instruction demonstrated greater gains in both rate and comprehension than students without instruction in a number of studies comparing a variety of instructional strategies: Long (1962), Beasley (1964), Foxe (1966), Stebens (1967), Sawyer (1969a, 1969b), Belcher (1971), Bryan (1971), Herman (1972), Brandt (1975), and McHargue (1975).

Long (1962) This investigator found two methods of instruction, a printed-materials approach compared to a machine-centered approach, were equally effective for improving reading rate and comprehension, although the printed materials approach appeared to be more effective in improving comprehension scores.

Foxe (1966) noted that experimental students in

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202 Long, loc. cit.
203 Beasley, loc. cit.
204 Foxe, loc. cit.
205 Stebens, loc. cit.
206 Sawyer, loc. cit.
207 Belcher, loc. cit.
208 Bryan, loc. cit.
209 Herman, loc. cit.
210 Brandt, loc. cit.
211 McHargue, loc. cit.
212 Long, loc. cit.
213 Foxe, loc. cit.
her study made significant gains in rate and vocabulary and listening comprehension; those students were also significantly more anxious than the comparison group.

Stebens (1967)\textsuperscript{214} found that students who did not receive instruction also improved their reading skills, but the improvement was not as great as those receiving instruction. This study lends support to the position advocated by Gladfelter in 1940 that the demands of college reading tasks themselves aid in improving reading skills.

Both well-controlled and designed studies by Herman (1972)\textsuperscript{215} and McHargue (1975)\textsuperscript{216} used volunteer cross-sections of total university populations. They found positive effects and marked improvement of statistical significance in their subjects' ability to read college material at adequate rate with adequate comprehension, over control subjects who did not receive such instruction.

Only three studies of the total group of developmental studies which were examined reported no significant difference in rate and comprehension and these studies had other limiting factors. These studies were:

1. Feinberg, Long and Rosenheck (1962)\textsuperscript{217} concluded the results of a mandatory course were invalid due to

\textsuperscript{214}Stebens, loc. cit.
\textsuperscript{215}Herman, loc. cit.
\textsuperscript{216}McHargue, loc. cit.
\textsuperscript{217}Feinberg, Long and Rosenheck, loc. cit.
negative response to such required instruction and the negative testing attitude of their subjects.

2. Limitations in the study itself were believed to have negatively influenced the findings by Nikas (1965).218

3. Trautwein (1968)219 noted students expressed satisfaction with the counseling-orientation-study course, although no significant differences in reading speed, comprehension or study skills were identified by them.

Changes in Reading Efficiency

The term Reading Efficiency was introduced into the vocabulary of reading scholars by Miller (1956) to describe the phenomena of both reading and comprehending.220 Since both reading rate and comprehension are crucial parts of the reading process, he argued that any measure of reading effectiveness must take both factors into account. McHargue offered a summary of the debate over this aspect of measurement which considered the opposing groups of scholars.221 Interested readers may review the following articles for

219 Trautwein, loc. cit.


221 McHargue, op. cit., pp. 3-8.
further discussion: Miller (1956),\textsuperscript{222} Farr (1960),\textsuperscript{223} Braam (1963),\textsuperscript{224} Carver and Darby (1972),\textsuperscript{225} and Rankin (1974).\textsuperscript{226}

Three recent Developmental studies reported the use of this measurement of program effectiveness: Bryan (1971), Herman (1972), and McHargue (1975). All three of these well-controlled studies have been discussed previously in this chapter and were also included in the summary charts of Tables I, II, III. Both Herman and McHargue included extensive explanations of course content in their reports. Reading Efficiency measures of effectiveness were not reported by Corrective or Academic Support Program investigators.

Changes in Grade Point Average

Academic achievement was utilized as a criterion for evaluation of program effectiveness for a number of years. Fairbanks credited one of the earliest program reports to Farr in 1931, but noted this measure was still a less

\textsuperscript{222}L. Miller, 1956, 1970, op. cit.
\textsuperscript{223}R.C. Farr, "Reading-What can be Measured?", (Newark, Delaware: International Reading Association, 1969.)
\textsuperscript{224}L. Braam, "Developing and Measuring Flexibility in Reading," (The Reading Teacher, 1963, 16), pp. 247-251.
\textsuperscript{226}See also E.C. Rankin, "The Measurement of Reading Flexibility," 1974, op. cit.
frequent means of evaluation than reading test scores until the past two decades.\footnote{Fairbanks, op. cit.} In an often quoted article by the prominent reading authority Robinson, the use of academic achievement as the \textit{sine qua non} of program evaluation was promoted. This position has been accepted by subsequent investigators such as Bloomer (1962),\footnote{Bloomer, op. cit.} Fauk (1965),\footnote{Fauk, op. cit.} Hafner (1966),\footnote{Hafner, op. cit.} and Colvin (1972).\footnote{Colvin (1972), op. cit.}

However, Martha Maxwell (1971) has argued that proper program evaluation includes a variety of factors, among which may indeed be academic achievement, but grades should not be used as the sole criteria, as they may have been in previous studies.\footnote{Martha Maxwell, "Evaluation of College Reading and Study Skills Programs," (U.S. Educational Resources Information Center, May 1970), ED 045 294.}

\texttt{McHargue} (1975) suggests that reading programs, regardless of methodology and evaluative measures, must move from a "survival of the fittest" concept (i.e. which is the best method) to one which offers options so that individual students are trained to their capacity.\footnote{McHargue, op. cit., pp. 26.}

The most frequently used measure of academic achieve-
ment utilized in the studies examined in the present investigation was, however, grade point average. Other formulas to compute such averages were proposed. Swindle (1968)\textsuperscript{234} and Herman (1972)\textsuperscript{235} utilized a Cumulative Quality (grade) Point Ratio (C.Q.P.R.) to determine program effectiveness of their developmental programs. Turner, Sais and Gatewood (1974)\textsuperscript{236} used a Quarterly Point Average (Q.P.A.) which utilized previous measures of academic performance to compute gain or decrease scores.

Four studies included reviews of other college reading improvement programs which utilized academic achievement as a measure of program effectiveness: Entwisle (1960),\textsuperscript{237} Wright (1960),\textsuperscript{238} Bednar and Weinberg (1970),\textsuperscript{239} and Fairbanks (1972).\textsuperscript{240} Entwisle reported in tabular form the type of students enrolled, evaluation criteria utilized, baseline of comparison, methods for controlling bias, and both immediate and longrange results.\textsuperscript{241}

Fairbanks also summarized both immediate and longrange

\textsuperscript{234}Swindle, loc. cit.
\textsuperscript{235}Herman, loc. cit.
\textsuperscript{236}Turner, Sais and Gatewood, loc. cit.
\textsuperscript{237}Entwisle, loc. cit.
\textsuperscript{238}E. Wright, loc. cit.
\textsuperscript{239}Bednar and Weinberg, loc. cit.
\textsuperscript{240}Fairbanks, loc. cit.
\textsuperscript{241}Entwisle, idem.
effects on grade point average for seventy-nine studies from 1930-1972. Her charts also included program and population descriptions, research controls used, and the correction for bias utilized in each investigation. 242

Tables I, II, III have presented the results of this investigation and summary of program effect. Certain studies have been selected for additional attention in the narrative review which follows.

Grade Point Average Effects in Corrective Programs. Fourteen programs utilized academic achievement to indicate some measure of program effectiveness. Of this group only four indicated no significant differences in grade point average changes. Clark (1963), 243 Regensberg (1966), 244 G. Friend (1970) 245 and Reese (1975). 246 A brief review of the studies follows; a complete review of all studies was included in Table I.

Clark (1963). 247 Identifying the reading difficulty and providing corrective treatment for freshmen from widely

242 Fairbanks, "Relationship Between Research Control and Reported Results of College Reading Improvement Programs," (Clemson, South Carolina: National Reading Conference, 1975), pp. 80-93.

243 Clark, loc. cit.
244 Regensberg, loc. cit.
245 G. Friend, loc. cit.
246 Reese, loc. cit.
247 Clark, loc. cit.
diverse cultural and geographical distribution who enrolled at the Church College of Hawaii (Latter-Day Saints) was the topic investigated. The corrective treatment was a one year experimental remedial reading program compared to a "traditional English program." Seventy-two students, selected from one hundred and sixty-seven students who scored below the 25th percentile of the reading section of the College English Test were paired, then randomly assigned to either experimental or control groups. All participants were informed of the experiment and agreed to cooperate. The experimental group received remedial reading instruction; the control group received a regular freshman English course. As a result of extensive diagnostic testing and analysis after the year's corrective work, Clark found: (1) a critical need for remedial reading instruction at the college, (2) significant changes in reading scores for the experimental group over the control group, but (3) little immediate effect upon general academic achievement. He recommended changes in the existing program of instruction for handicapped readers who enrolled in the freshmen English program at the college.

Ikenberry et al (1966). This study evaluated the effect of a combined approach utilizing reading-study skills instruction and reduced academic credit load with marginal ("failure-prone") students enrolled at West Virginia

248 Ikenberry, loc. cit.
University. They concluded that failure-prone freshmen assigned to a special reading class and reduced credit load enjoyed improved academic achievement as well as reduced withdrawal rates.

Lesnik (1968)\textsuperscript{249} conducted a highly individualized study-counseling approach and concluded that treatment was responsible for the higher GPA's of the experimental group.

Yuthas (1969)\textsuperscript{250} found significantly higher GPA's were achieved by students enrolled in a traditional classroom method of reading instruction when compared to a similar group enrolled in a self-help program. He suggested that enrollment in such corrective programs was also significantly related to persistence in college.

**Grade Point Average Effect in Academic Support Programs.**

Eight of the nine studies examined in this category reported results in terms of grade point average change.

Furey (1964)\textsuperscript{251} Durkee (1966),\textsuperscript{252} Church (1970)\textsuperscript{253} and Keetz (1970)\textsuperscript{254} reported no significant changes following

\begin{itemize}
\item \textsuperscript{249} Lesnik, loc. cit.
\item \textsuperscript{250} Yuthas, loc. cit.
\item \textsuperscript{251} Furey, loc. cit.
\item \textsuperscript{252} Durkee, loc. cit.
\item \textsuperscript{253} Church, loc. cit.
\item \textsuperscript{254} Keetz, loc. cit.
\end{itemize}
instruction, while Roth, Mauksch and Peiser (1967), 255
Hutchinson (1970), 256 Anthony (1971), 257 Kaye (1971) 258 and
Ritter (1971) 259 reported significant changes following
instruction. All students in the studies were identified
(by one means or another) as having deficient grade point
averages and were on some form of academic warning or
probation. All interventions in the "successful category"
utilized some form of combined treatment involving study and
counseling, study and self-understanding or study and
practice sessions.

These studies have been summarized in Table II.

Grade Point Average Effects in Developmental Programs.
Differences in Grade Point Average (GPA) favoring partici-
pation were reported by E. Wright (1960), 260 Bloomer
(1962), 261 Pauk (1965), 262 Stebens (1967), 263 Swindle

255 Roth, Mauksch and Peiser, loc. cit.
256 Hutchinson, loc. cit.
257 Anthony, loc. cit.
258 Kaye, loc. cit.
259 Ritter, loc. cit.
260 E. Wright, loc. cit.
261 Bloomer, loc. cit.
262 Pauk, loc. cit.
263 Stebens, loc. cit.
Contrary results in GPA changes were reported by Risenmay (1965), Trautwein (1968), Wilson (1968), Belcher (1971) and Bryan (1971) and inconclusive findings were noted by Gerber (1966), (1975) and Eanet (1976). These have been summarized in Table III.

E. Wright (1960). This study re-examined the whole issue of the effect of college reading-study instruction on scholastic achievement in the form of Grade Point Average by examining groups of freshmen students enrolled at the College of Agriculture, Forestry and Home Economics at the University of Minnesota, St. Paul. An extensive statistical analysis

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264 Swindle, loc. cit.  
265 R. Sawyer, loc. cit.  
266 E. Chandler, loc. cit.  
267 Herman, loc. cit.  
268 Risenmay, loc. cit.  
269 Trautwein, loc. cit.  
270 Wilson, loc. cit.  
271 Belcher, loc. cit.  
272 Bryan, loc. cit.  
273 Gerber, loc. cit.  
274 Hunter, loc. cit.  
275 Eanet, loc. cit.  
276 E. Wright, loc. cit.
including eighty-three summary tables of findings has often been cited in related literature. Excluding the top quartile of entering freshmen, Wright identified two hundred and fifteen students in three divisions of the university, randomly assigning them to either experimental or control groups. The experimental treatment consisted of reading-study skills instruction as part of a Freshmen Communications course for which participants received credit. This placed their work in reading as equivalent to training in writing or speech and reduced any possible stigma associated with such instruction. One deficit of this study was an unexplained 28 percent mortality rate. A number of conclusions were drawn: (1) Experimental students made significantly more gain in rate of reading, vocabulary and comprehension than control groups; (2) A tendency for improvement in reading performance to persist beyond the training period was indicated; (3) Students in the control group also exhibited gains in reading performance without specific training in reading, however, their gains were far smaller and not significant statistically; (4) In quantitative courses, experimental students failed to surpass controls significantly in terms of grade point average gains; (5) In verbal-type courses, the experimental group did surpass the controls in grade point average at a level tentatively significant at .02 percent; (6) The experimental treatment had no observable effect on attrition during the time of the study.
The effects of a college reading program on grade point ratio were measured as the "determiner of effectiveness." A sample of randomly selected freshmen from the total freshmen class was randomly divided into experimental and control groups of forty each. The experimental group met for two one hour sessions weekly for twelve weeks and were then retested. Results indicated no significant differences between groups at the outset of the experiment, but significant gains over the controls in reading rate and comprehension. No significant differences appeared between groups in achieved grade point averages; however, when correction was made for predicted college grade point average, the resulting academic gains score indicated a highly significant difference in favor of the experimental group. A greater number of control students who did not receive treatment appeared on academic probation lists and withdrew from school. It was unfortunate that this study did not provide a complete description of the experimental treatment.

Pauk (1965) reported gains in GPA favoring treatment, but did not provide statistical data to support his findings.

L. Stebens (1967). Entering freshmen who

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277 Bloomer, loc. cit.
278 Pauk, loc. cit.
279 L. Stebens, loc. cit.
voluntarily enrolled in the course were compared to an equivalent group of non-participants. Participants met for nine weeks, paying a fee for the non-credit course. Significant improvement in academic achievement and reading rate resulted, and these gains were retained over the five semesters of the study.

*Swindle (1968)*\(^{280}\) used cumulative GPA to measure the effect of instruction, reporting a significant difference which he believed indicated those males who participated in the course had a better chance of continuing their college education.

*R. Sawyer (1969)*\(^{281}\) found GPA gains leveled off after the second semester in his study of engineering and science freshmen.

In one of the few completely reported studies examined in this review, *Herman (1972)*\(^{282}\) used forty matched pairs of students who enrolled in an intensive six week college reading improvement program at the University of Connecticut. Four research components were considered in developing his design: the type of study population, the length of instructional program, the methods and materials of instruction and program evaluation components. Fourteen months after the close of the experimental program, both

\(^{280}\)Swindle, loc. cit.

\(^{281}\)Sawyer, loc. cit.

\(^{282}\)Herman, loc. cit.
experimental and control groups were retested and a comparison of Cumulative Quality Point Ratio was made. This ratio was obtained by multiplying a numerical value assigned to a final course grade times the number of credit hours of the course.

He found an intensive six week college reading improvement program could effect reading comprehension, reading speed, and the Cumulative Quality Point Ratio of college students and that the increases in speed and comprehension were largely retained, at least for the period of time studied. He concluded:

It seems logical to assume that the added reading skills acquired by the experimental students, were working successfully for them in their regular college classes, otherwise we would not find the highly significant differences in reading speed and reading comprehension in the follow up evaluation fourteen months after the experimental program. Unused skills tend to diminish over time.

The significant difference in favor of the experimental group in CQPR at Time 3 and the noted trend of increasing CQPR from Time 1 to Time 3, further suggests that continued application of the new skills learned and mastered in the experimental program have a cumulative effect on the academic achievement of students. The added speed and comprehension attained by the experimental students had to begin "paying off" almost immediately in terms of improved college grades. Otherwise, the difference in the CQPR mean at Time 3 would not have been significant for the experimental group. This cumulative effect was illustrated in Chapter Four by citing the example of experimental student E30. He had to earn substantially better grades each semester in order to improve his initial CQPR of 2.5 to a 3.3 by Time 3 three semesters later.

From examination of the college dropouts and non-dropouts in the experimental and control groups, it would appear that students with low SAT scores or CQPRs have a better chance of improving their grades and staying in college by participating in a reading
improvement program like the one described in this study.\textsuperscript{283}

This study utilized good research control and comprehensive reporting of various steps of the investigation. It appeared to be a valuable contribution to the literature of college reading-study programs.

\textbf{Summary of Studies Reporting Changes in Grade Point Average.} The studies reviewed in this section utilized changes in grade point average as an indication of program treatment effectiveness. The population groups in these studies represented a wide spectrum of students in all three categories: Corrective Programs for students with minimal or inadequate academic competencies; Supportive Programs for students with skills deficiencies and/or motivational, attitudinal or disciplinary problems which have inhibited their academic success or any combination of the above; and Developmental Programs for students capable of achieving at the college level who desire to improve their effectiveness as students.

The programs reported a diversity of instructional variables: length of instruction, number of meetings, credit or non-credit status, method of instruction, diagnostic, individual or group approaches and other factors identified as Program Operational and Content factors reported previously throughout this study.

\textsuperscript{283} Ibid., pp. 148-149.
Differences favoring participation appear to have been identified by a majority of the studies. Cumulative benefits following instruction also appear to have been identified. This may indicate GPA changes were increasingly significant subsequent to instruction. Combined study skills-reading-counseling approaches designed for (1) students on academic probation and (2) students requiring corrective or remedial intervention, appear to have offered the greatest potential for increasing student achievement. Specific aspects of the content of such programs were not generally provided by the studies examined, seriously limiting replication attempts.

Studies Reporting Changes in Withdrawal Rates and Attrition. Changes in withdrawal rates or attrition for students receiving reading-study skills instruction were reported as incidental findings in some studies, but were examined more closely as a significant indication of change in others. Among Corrective Programs, reports of lower attrition rates for students receiving reading-study assistance was reported by Mattila (1960), Ikenberry et al (1966), Yuthas (1969) and Harshbarger (1972). Among the Developmental Programs, fewer dropouts for those receiving instruction were

284 Mattila, loc. cit.
285 Ikenberry, loc. cit.
286 Yuthas, loc. cit.
287 Harshbarger, loc. cit.
reported by Bloomer (1962), Swindle (1968), Sawyer (1969) and Chandler (1970). Inconclusive findings were noted by Sosebee (1963), Phillips (1969) and Lowe (1970). Withdrawal rates were a major interest among Academic Support Programs, although reporting of withdrawal or retention rates was inconsistent.

**Studies Involving Limited Treatment**

Thirty-two studies reported by other investigators were deleted from this study. Although these studies investigated relationships between variables, they were not concerned with the effect of reading-study instruction. None of the deleted studies involved a treatment greater than two hours duration and thus were considered in the category as limited treatment. These studies examined various factors associated with student success as measured by such criteria as comprehension, reading flexibility, attrition, grade point averages, or numerous other indicators of change. The study method, however often, only involved (1) the identification of a population, frequently students in psychology

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288 Bloomer, loc. cit.
289 Swindle, loc. cit.
290 Sawyer, loc. cit.
291 Chandler, loc. cit.
292 Sosebee, loc. cit.
293 Phillips, loc. cit.
classes, and (2) comparison of their pre-post test responses to some aspect of comprehension, for example.


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297 Linda Annis and J.K. Davis, "The Effect of Study Techniques and Preferences on Later Recall," ERIC Document,
September 1976, ED 132 213.

298 James D. Bowman, "Effects of a Cognitive Organizer With and Without Accompanying Directions for its Use as a Facilitator of Reading Comprehension," (Unpublished doctoral dissertation, University of Maryland), University Microfilms, Ann Arbor, Michigan, 1975, 76-17,781.


Studies of Relationships Between Student Characteristics and Academic Performance. The relationship of reading and/or study habits and attitudes to grade point averages was studied by Kelly and Mech (1967), Weigel and Weigel (1967), and Prociuk and Breen (1974). Weigel concluded that college students "know" theoretically how to read and study but don't


322 S.J. Samuels, P.R. Dahl, "Establishing Appropriate Purpose for Reading and Its Effect on Flexibility of Reading Rate," Journal of Educational Psychology, Vol. 67, No. 1, (February 1975), 38-43.


327 Katherine Winter, "Contextual Influences on Sentence Reading," ERIC Document, April 1974, ED 090 504.

328 Kelly and Mech, loc. cit.

329 Weigel and Weigel, loc. cit.

330 Prociuk and Breen, loc. cit.
employ this knowledge.

Moss (1966)\textsuperscript{331} examined the factors of reading, personality and achievement in both "poor" and "good" college readers. Draper (1965)\textsuperscript{332} and Mangieri and Olsen (1975, 1976)\textsuperscript{323} were interested in college reading ability and self-concept.

Rainwater (1975)\textsuperscript{334} concluded that reading comprehension differences do exist between chicano and non-chicano students. These he felt were "caused" by inferential comprehension skill difficulties.

The relationships between reading and rate of dropout and perseverance were studied by Hinton (1961)\textsuperscript{335} and Guthrie (1971).\textsuperscript{336}

In an interesting study with entering medical students by Ambrosino, Brading and Norval, administration of a diagnostic reading test and subsequent review and evaluation of student records revealed that in at least half of the cases of academic failure among a total of two hundred and sixty-eight students, reading deficiencies played a

\textsuperscript{331} Moss, loc. cit.
\textsuperscript{332} Draper, loc. cit.
\textsuperscript{333} Mangieri and Olsen, loc. cit.
\textsuperscript{334} Rainwater, loc. cit.
\textsuperscript{335} Hinton, loc. cit.
\textsuperscript{336} Guthrie, loc. cit.
prominent part. 337

A similar investigation by Entwisle and Hebel (1977) 338 used the Davis Reading Test to appraise the speed and comprehension level of over 95 percent of freshmen medical students entering the University of Maryland in 1962, 1963, 1964. They suggested that although the DRT scores were not precise predictors of academic performance, they were useful in screening for students deficient in study skills even among selected achieving student populations.

The relationships among science achievement, reading comprehension and critical reasoning in black college students were examined by Raven, Hannah and Doran (1974). 339 Freshmen students enrolled in a required introductory physical science course completed testing to determine if a new test, Raven's Test of Logical Operations (RTLO), was effective in predicting variance of science achievement, reading and critical reasoning. The authors believed their findings have considerable implication for science curriculum design and for prescribing science comprehension difficulties.

Studies of Relationships Between Student Characteristics and Reading Rate. Himelstein and Greenberg (1974) 340 utilized one hundred volunteer subjects from an Introductory Psychology

338 G. Entwisle and Hebel, loc. cit.
339 Raven, Hannah and Doran, loc. cit.
340 Himelstein and Greenberg, loc. cit.
class to demonstrate that reading rate could be manipulated relatively easily but comprehension remained unaltered. Maxwell and Mueller (1965)\textsuperscript{341} also used psychology students to determine if reading speed could be increased without a change in comprehension simply by telling students to read faster. However, they eliminated students who initially scored less than 50% comprehension on the assumption that such students were not trying.

McConkie et al (1972)\textsuperscript{342} studied experimentally induced reading flexibility; Calfee and Jameson (1971)\textsuperscript{343} the effect on reading speed of target items in the text; and Samuels and Dahl (1975)\textsuperscript{344} the effect of reading for a purpose on reading flexibility. Limited explanations of procedures used in conducting these studies would make replication difficult.

While a number of researchers investigated issues pertaining to increased reading rate and comprehension, few studied the characteristics of college readers in relation to the amount of time spent in reading and study, and none were found which investigated the effect of time spent in

\begin{itemize}
\item \textsuperscript{341} Maxwell and Mueller, loc. cit.
\item \textsuperscript{342} McConkie et al, loc. cit.
\item \textsuperscript{343} Calfee and Jameson, loc. cit.
\item \textsuperscript{344} Samuels and Dahl, loc. cit.
\end{itemize}
relation to measurable changes. Yarington (1967)\textsuperscript{345} claimed current empirical data of this nature was not available, and his conclusion appears to be supported at least as far as the present investigation was concerned. Ingram (1967)\textsuperscript{346} investigated the dynamics of the reading process in college freshmen seeking to describe how university freshmen read.

**Studies of Relationships Between Student Characteristics and Reading Comprehension.** A number of researchers investigated question and sentence patterns and their relationship to reading comprehension skills, and at least one dissertation (Bowman, 1975)\textsuperscript{347} summarized the conflicting viewpoints in these one treatment studies. Hiller and Denzel (1973)\textsuperscript{348} compared students with idiosyncratic study methods with students using passive study methods in their ability to respond to different kinds of questions inserted in the text. Overall differences between groups were not significant. The questions used in this research were classified by Bloom's taxonomy, comprehension domain. Other selected


\textsuperscript{347}Bowman, loc. cit.

\textsuperscript{348}Hiller and Denzel, loc. cit.

Summary of Studies Involving Limited Treatment. This review of studies involving limited treatment has been included to

349 Abrams, loc. cit.
350 Annis and Davis, loc. cit.
351 Frase and Silbiger, loc. cit.
352 Horowitz and Berkowitz, loc. cit.
353 Johnson, loc. cit.
354 Kingston and White, loc. cit.
355 Morse, loc. cit.
356 Ohaver, loc. cit.
357 Pezdek and Royer, loc. cit.
358 Schumacher et al, loc. cit.
359 Seegars and Rose, loc. cit.
360 Weaver, White and Kingston, loc. cit.
361 Winter, loc. cit.
362 Groteleuschen and McGaw, loc. cit.
indicate the considerable body of literature and research found in the category considered as limited or no treatment studies. The studies primarily reported the results of investigations of relationships between various student characteristics and other selected variables, but were not concerned with the effects of a treatment which involved more than two class sessions. Although other investigators may have included the results from these studies, for the purpose of this study they have been excluded since they did not involve an extended reading-study intervention.

Problems of Research Design

Various reading experts and researchers have recognized the cumulative obstacles of doing research in practical or applied settings, largely due to weakness in internal and external validity. Shaw, in his review of the various dilemmas encountered in college reading during the decade prior to 1961, echoed an earlier critique by Robinson in 1950, that college reading lacked both rigorous research quality and quantity.363

In a 1962-63 critique, Robinson evaluated college reading research in light of ten criteria and offered the opinion that one of the chief difficulties appeared in the way such reports were written, particularly in their lack of

Current issues of the National Reading Conference and Western College Reading Association yearbooks have not included critiques based on scholarly observation. They appear to have utilized statistical analyses of research, such as the Fairbanks study. In this study, Fairbanks noted that College Reading-Study Skills researchers still have problems but progress had been made in the last twenty years. As an example, she cited the matter of control for motivation in experimental studies. Prior to 1950 she found no attempts to control for this important variable, but after 1950 she found thirty-seven studies of seventy-nine located in which some attempt had been made to control for this factor.

Maxwell reviewed the major differences between evaluation and implementing research, holding the position that typical research paradigms can rarely be used and the rigid assumptions necessary for rigorous statistical tasks can rarely be met in the applied setting of a college or

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365 Marilyn Fairbanks, "Relationship Between Research Control and Reported Results of College Reading Improvement Programs," (Reading: Convention and Inquiry, Twenty-fourth yearbook, National Reading Conference, 1975), pp. 80-93.

366 Ibid.
However, McHargue discussed the problem as it related in very practical terms to his well-controlled study. Three areas of research design appeared at first to be incongruent with the service orientation of the Learning Assistance Center at Stanford University.

...The first was the issue of whether it is appropriate to have the usual control group when the major mission of the organization is to provide appropriate training, not to withhold it. This concern was dealt with in this study by:

1) Reasoning that the information learned in a tightly controlled study would benefit more students in the long run;
2) Over-recruiting so that there really were not enough materials to serve all the students who desired training; and
3) Assuring the control group that they had first priority to take the treatment of their choice during the quarter following the study.

The second problem was whether to offer treatments which might make the study more complete but might also be less effective for students; placebo treatment options were rejected.

Finally, the third major concern in performing controlled research that McHargue discussed was that some of the requirements of legitimate scientific study were incompatible with usual ways of providing learning assistance. The example given was the design requirement of random assignment of subjects to treatment groups, even though in practice

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368 McHargue, op. cit., pp. 171.
students probably would have a choice. The advantages he noted had to do with the possibly significant answers to "real" problems and subsequent improvement to services which was one outcome reported in his study. This study could serve as a carefully designed model of applied research and clear research reporting.

Five aspects of adequate research control were examined in this study: (1) the use of statistical procedures and level of significance, (2) the use of multiple treatment groups, (3) the inclusion of an outside, no treatment comparison group, (4) the inclusion of process to equate groups prior to treatment, and (5) adequate sample size. Further explanation of these aspects has been included in Chapter 3.

Summary of Empirical Research Studies Investigating the Effect of College Reading-Study Skills Instruction

Studies investigated in this section utilized one or a combination of the following factors to determine the effectiveness of college reading-study instruction: (1) changes in reading rate and/or comprehension; (2) changes in reading efficiency; (3) changes in grade point averages or in cumulative grade point averages; and (4) changes in withdrawal or attrition rates for the population undergoing treatment.

The investigations were categorized using the

369 Ibid.
population treated, the group for whom the study was designed as the determiner. This method yielded three categories:

1. Corrective or remedial programs designed for students with minimal or inadequate academic competancy;
2. Supportive programs designed for students with academic skills deficiencies or other disadvantages which inhibited their academic success; and
3. Developmental programs designed for students capable of achieving at college level who desired to improve their effectiveness as students.

Examining the literature in this way revealed certain trends among these three program categories.

1. Corrective Programs appear to provide more emphasis on what may be considered an extension or completion of secondary level reading-study skills. Attention was given to comprehension, vocabulary and critical reading skills, however, considerably less attention appears to have been given to reading rate instruction, although excessively slow rate was thought to influence comprehension by at least one investigator. Many Corrective Programs included extensive counseling as an aspect of instruction.

2. The Academic Support Programs examined appear to have provided counseling-study instruction with almost no emphasis on reading instruction. Individualized diagnoses of reading habits or skills of failing students were not the subject of investigation in any of the studies located. Just what reading handicaps students in Academic Support Programs might have which contributed to their academic difficulties
was not addressed.

3. Developmental Programs appear to provide instruction in reading rate and comprehension, study skills and considerable emphasis on critical reading. Some attention was given to word analysis and vocabulary in Developmental Programs. Less interest in counseling and more interest in providing reading instruction in college texts may characterize Developmental Programs.

The Content and Operational Factors examined in these sixty-six studies revealed a considerable deficit in reporting specific factors that would enable other investigators to knowledgeably replicate the programs. Investigators would be seriously handicapped in replicating almost all of the studies examined. Only a few researchers reported program content in sufficient detail to facilitate replication; among the most complete examples cited previously were studies by Herman,\(^{370}\) McHargue,\(^{371}\) Phillips,\(^{372}\) Clark.\(^{373}\)

Only three studies of the twenty-six Developmental Studies examined reported no significant changes in reading rate and comprehension as a result of instruction, leading one to suspect that such instruction does tend to increase rate regardless of the methods or instructional strategy.

\(^{370}\) Herman, loc. cit.
\(^{371}\) McHargue, loc. cit.
\(^{372}\) Phillips, loc. cit.
\(^{373}\) Clark, loc. cit.
However, the relationship between an increased ability to read and understand college level materials at more efficient rates and subsequent improved academic achievement as reflected by grade point averages was not clearly established. Researchers appear to agree that the ability to read rapidly with understanding is a desirable college attribute, but at best one can only assume that a student will indeed employ the improved skill in academic pursuit. Program participation did appear to influence withdrawal rates among participants indicating that reading-study instruction may facilitate completion of college.

V. SUMMARY OF THE CHAPTER

This chapter has reviewed the quantity and diversity existing in the reporting of college reading-study programs. That a number of such programs exist and were increasingly found on college and university campuses has been well documented by the literature. However, the descriptions of content and operational factors in the majority of programs was found to be inadequate. Researchers frequently did not include adequate descriptions of the treatment, the materials or the methods of instruction, or included only cursory explanations.

When programs were divided into categories on the basis of their description of the student population served, certain program patterns were observable. This integration permitted comparison of program content and operational
factors as well as allowing a closer examination of program effect. The following trends appeared: (1) Corrective Programs offered corrective-remedial instruction in vocabulary development, reading skills, comprehension and study skills; (2) Supportive Programs tended to offer counseling and study skills services; (3) Developmental Programs frequently provided critical reading-comprehension and/or reading rate-flexibility instruction.

Uniformity of content and operation factors and methods of instruction certainly was not viewed as a necessary outcome in this examination and the need for diversity of programs with the heterogeneous college-university population was recognized. However, a method of examining and comparing programs has been needed within the field.

Herman has summarized his review of a similar body of college reading-study literature by observing:

The diversity of opinion found in the literature likely reflects the absence of really conclusive and convincing data as to the effects of reading programs on future academic success. We might suggest that the principal reason for the lack of conclusive documentation is the complexity of the problem itself. And, no less important, the present generation of college teachers is less certain than only a few years ago as to just what constitutes real "academic achievement." 374

Contrary to this opinion, the present investigation proposes that integration of the literature may provide a greater range of options to program developers, evaluators

374 Herman, op. cit., pp. 50.
and practitioners.

Chapter 3 will discuss the procedure of this study. In Chapter 4 the results of the Meta-analysis will be reviewed, and Chapter 5 will include a summary discussion of findings and their implications.
Chapter 3

PROCEDURE OF THE INVESTIGATION

I. INTRODUCTION

The primary problem addressed in this study involved integration of the findings of the vast body of reading literature to determine if college and university reading-study programs generally proved beneficial to those participating in them. Included within this question were the following sub-problems:

1. For what student groups were college reading-study programs designed? Were programs designed to fulfill remedial/corrective, supportive, developmental or unspecified functions?

2. What program content and program operation factors were identified within program reports?

3. What relationship, if any, exists between these program content and operation factors and reported program effects?

The overall procedures of the study were to:
(1) analyze published research reports and dissertations relating to the effectiveness of college reading-study programs, (2) identify program content and operational factors reported in studies which met the research design criteria,
and (3) integrate these findings into a model(s) for developing and/or assessing college and university level reading-study programs.

II. SELECTION OF POPULATION AND SAMPLE

Selection of literature

Extensive search procedures were used to identify literature reporting the results of college and university reading-study programs published between 1960-1977. Studies included within this search were limited to those which (a) involved students already enrolled in four year colleges or universities in the United States, (b) emphasized reading and/or study skills, and (c) reported program results in quantifiable terms.

A comprehensive manual search of this body of literature included the following sources:

2. Education Index.
4. Educational Research Information Center (ERIC).
7. National Reading Conference Yearbooks, annual reviews of college reading-study investigations.
8. Reading Research Quarterly, annual reviews of
reading research.


10. Western College Reading Association Yearbooks.

In addition to this manual search, the computer facilities at the University of California, Davis, were used to scan more than 49,000 entries which yielded 676 bibliographic entries. These entries were then cross-checked and compared to the manual search data. The criterion words and terms used in this search have been included in Appendix A. Each reference was initially scanned and categorized. Those which were not pertinent to the present investigation were retained for future reference.

It is conceivable that programs in many colleges and universities may not have reported experimental data in quantifiable terms and yet operate programs not considered by this investigation. A case in point was the reading-study program at Harvard University, perhaps one of the oldest in this country. This program has been described by its directors, Perry (1959)\(^1\) and Hodgins (1970),\(^2\) but did not report experimental data during the time of this study. Other examples of this limitation also exist.

Each study was located and read to determine if it


\(^2\) Roderic C. Hodgins, "The Text is the Adversary," (Teachers College Record, Vol. 72, No. 1, Columbia University, September 1970), pp. 7-22.
met the criteria noted previously. Sixty-nine studies dealing with college-university reading-study programs reported their data in quantifiable terms and appeared to meet these criteria, although in closer examination three were duplicate reports. Those studies which were available in published form were zeroxed. Dissertations proved to be more difficult to obtain. As a general finding, since the advent of micro-film services few libraries loan copies of doctoral dissertations. The investigation was thus limited to those dissertations for which funds were available for purchase through University Microfilms, a dissertation on-demand copying service in Ann Arbor, Michigan. Fifty dissertations were purchased through cooperative efforts involving funds from the University of Pacific School of Education Learning Center, the University of Pacific Library, and the investigator.

Adequacy of Program Reporting

The adequacy of program content and operation reports was important to this investigation. Furthermore, an adequate description of content has been considered essential for replication purposes. The importance of replication in educational research in general was discussed in 1968 in the Phi Delta Kappan when Robert Bauerfeind wrote: 3

The principle of replication is the cornerstone of scientific inquiry. This principle holds that under

similar conditions one should obtain similar findings. Replication has long been an essential aspect of research in the natural sciences, where research findings are not published until their repeatability has been demonstrated. In the natural sciences, the investigator may repeat his experiment 10 or 20 times, cross-comparing all results, prior to publishing his "findings."

Sample and Population

The sixty-six studies which met the criteria described above represented a sample of 12,157 students. This population had been treated, observed and compared by various college reading-study programs throughout the United States during the period from 1960-1977.

Four descriptive categories were utilized in Chapter 2 to organize the reporting of these studies. The selection of these four categories was based on their descriptions of the student population which each program served. The categories and the general description of their populations were:

(1) Corrective Programs: the population was most frequently described as high-risk, open admission students, usually freshmen with minimal admission qualifications who were required or "encouraged to participate" in the reading-study program. Socio-economic and educationally disadvantaged students were included. Several groups were selected on the basis of an arbitrarily determined cut-off point (i.e. the lower third of all entering freshmen).

(2) Academic Support Programs: this classification included second semester freshmen and sophomore students on
some form of academic probation as the usual target population examined. A broad range of predicted potential student achievement scores were noted as criteria for selection by several investigators. Usually below acceptable grade performance or low motivation was the common identifying criteria used to select participants. Academic Support Programs included both volunteer and required-attendance participants.

(3) Developmental Programs: this category generally included programs designed for or open to all entering freshmen or other college students. Some students were advised or voluntarily wanted to improve their reading and/or study skills. A few programs excluded top quartile achieving students, using entry college admission tests as the criteria for exclusion.

(4) Unclassified Programs: seven programs which did not describe their populations in sufficient detail to permit classification were included in this category.

The sample total represented by each study has been included in Table VII.
TABLE VII
COLLEGE AND UNIVERSITY READING-STUDY PROGRAMS
CLASSIFIED BY STUDENT PARTICIPANTS

<table>
<thead>
<tr>
<th>Program Type</th>
<th>Number of Studies</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrective Programs</td>
<td>24</td>
<td>3,926</td>
</tr>
<tr>
<td>Academic Support Programs</td>
<td>9</td>
<td>789</td>
</tr>
<tr>
<td>Developmental Programs</td>
<td>26</td>
<td>6,749</td>
</tr>
<tr>
<td>Unclassified Programs</td>
<td>7</td>
<td>684</td>
</tr>
<tr>
<td>Duplicate studies</td>
<td>3</td>
<td>N not included</td>
</tr>
</tbody>
</table>

Total sample represented in 66 studies 12,157
Generalizability

Although the sample represented a broad cross-section of students enrolled in college reading-study programs in the United States during the period of investigation, it was limited to only those programs which were reported in the literature and were accessible to the investigator.

Due to the extensive search techniques utilized and the broad range of program reports included however, it was assumed that the sample of this study represented the type of students who would be enrolled in college-university level reading-study programs and thus was generalizable to that population.

III. DESIGN AND PROCEDURES

The Meta-Analysis Design and Rationale

The quantity of research in the college reading-study field was reviewed in Chapter 2 of this study and noted by such distinguished reading authorities as Bliesmer and Lowe (1960), Tillman (1972), and Raygor (1973). The need for further integration of educational research was emphasized by

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Gene Glass in his Presidential address to the American Educational Research Association. In this address, Glass noted:

In educational research, we need more scholarly effort concentrated on the problem of finding the knowledge that lies untapped in completed research studies. We are too heavily invested in pedestrian reviewing where verbal synopses of studies are strung out in dizzying lists. The best minds are needed to integrate the staggering number of individual studies. This endeavor deserves higher priority now than adding a new experiment or survey to the pile.

Current interest in integration of this abundance of educational research was evidenced by a special research newsletter recently issued by Phi Delta Kappa calling for just such synthesis.

The technique Glass proposed for this integration was the Meta-Analysis; "Meta" a word from the Greek meaning beyond, above, or over. Its purpose was to analyze the analyses. Glass used the term to refer to statistical analysis of a large collection of analysis results from individual studies for the purpose of integrating and comparing their findings.

Most important in the Meta-Analysis procedure was the "effect size" of the treatment: the mean difference on

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9 Glass, op. cit., p. 3.
the outcome variable between treated and untreated subjects divided by the within group standard deviation. Since some studies have measured outcomes on more than one variable or at more than one time, the number of effect size measures exceed the number of studies. 10

The definition of the effect size, or magnitude of effect was "...the mean difference between the treated and control subjects divided by the standard deviation of the control group." 11 The formula for this calculation was:

\[ \text{ES} = \frac{\bar{x}_T - \bar{x}_C}{s_C} \]

Each effect size became an "observation" and inferential statistics were then applied to the observations and statistically analyzed. The effect size can be calculated on any outcome variable the researcher chooses to measure, can measure different types of outcomes, and can be compared across outcomes. 12

Calculating effect sizes can be routinely accomplished when researchers report means and standard deviations. When this information was not reported, effect sizes were obtained by the solution of equations from t and F ratios or other

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12 Ibid., p. 753.
Implementing the Meta-Analysis Procedure

Following the selection of studies which met the initial criteria discussed above, a second reading was made to evaluate each study in terms of Internal and External Validity according to a table suggested by Campbell and Stanley. At a third reading the studies were evaluated in terms of research control factors. The factors considered were: (1) use of statistics and level of significance, (2) use of multiple treatment groups, (3) presence or absence of an outside no-treatment group, (4) inclusion of a procedure to equate the group, (5) sample size. The recording forms utilized in these readings were included in Appendix B and Appendix C.

Periodic checks of the evaluation procedures were made by Dr. B.H. Hopkins, University of Pacific School of Education. Further random checks were made by Stanley Barrick, Research and Evaluation Consultant, San Juan School District, and Consultant-Contractor for the California State Department of Education, Office of Program Evaluation and Research.

13 Ibid.

A second random check of the evaluative procedure was conducted by Ms. Kate Williams, Doctoral Graduate Assistant. Williams evaluated each of the studies randomly checked previously by Barrick, and an additional eleven studies randomly drawn from the assortment of dissertations and papers which comprised the total groups of pertinent investigative reports. The results of these checks were reported in Appendix E.

Content Factors

The independent variables examined in this study included twenty-eight program content factors identified by Fairbanks¹⁵ and previously reported on pages 11-12. The program description for each study was examined to determine if the content factors were included in instructional procedure. The twenty-eight content factors were:

1. Main idea
2. Analyzing paragraphs
3. Setting up purposes
4. Recognizing inferences
5. Drawing conclusions
6. Differentiating fact and opinion
7. Reading charts and graphs
8. Outlining
9. Sequencing ideas
10. Summarizing, notetaking
11. Context clues
12. Affixes, roots
13. Etymology
14. Dictionary study
15. Notecards, word lists
16. Synonyms, antonyms
17. Word attack

18. Reading in Literature
19. Reading in Mathematics
20. Reading in Sciences
21. Reading in Social Sciences
22. Flexibility in rate
23. Acceleration
24. Mechanics in rate
25. Listening
26. Using the library
27. Scheduling time
28. Examination preparation

The form used to record inclusion of these skills has been included in Appendix D.

After more than one-third of the studies had been examined, it became apparent to the investigator that the paucity of program description would not allow this aspect of the investigation to continue without some modifications. (Lack of content description was discussed in Chapter 2 of this investigation.)

The investigator examined each study for mention of instructional strategies which included the content factors listed above. Similar words and synonyms were accepted. However, program reporting did not permit such detailed analysis unless the investigator made broad assumptions which were not warranted in an experimental study.

Program content factors were reported in more general terminology than that suggested by Fairbanks. Thus the following modification of program content factors (PCF) divided into six categories was made:

*This division was arbitrarily made based on the professional judgment of this researcher and current usage in college-reading literature.
1. **Word Study/Vocabulary**
   - Affixes, roots
   - Etymology
   - Dictionary study
   - Notecards, word lists
   - Synonyms
   - Word Attack

2. **Study Skills**
   - Listening
   - Using the library
   - Scheduling time
   - Examination preparation
   - Reading charts and graphs

3. **Notetaking**
   - Outlining
   - Sequencing ideas
   - Summarizing, notetaking
   - Content clues

4. **Critical Reading Skills**
   - Main idea
   - Analyzing paragraphs
   - Setting up purposes
   - Recognizing inferences
   - Drawing conclusions
   - Differentiating fact and opinion

5. **Reading in Content Areas**
   - Reading in Literature
   - Reading in Mathematics
   - Reading in Sciences
   - Reading in Social Sciences

6. **Rate/Flexibility**
   - Flexibility in Rate
   - Acceleration
   - Mechanics in rate

These six categories represent all of the twenty-eight content factors identified by Fairbanks, but have been arranged in broader categories to more nearly correspond with the type of reporting of content factors found in the reading-study literature and in the experimental studies.
examined.

Each study was then re-examined to determine if the factor had been included and was specifically mentioned, and this information was noted on the appropriate form devised for this purpose (Appendix D).

**Operational Factors**

The fifteen operational factors (POF) identified by Fairbanks were utilized as independent variables also.\(^{16}\)

These factors were:

1. Tests used diagnostically
2. Students informed of strengths and weaknesses
3. Student participation in planning
4. Student participation in evaluation
5. Use of time for lecture and demonstration
6. Use of time for discussion
7. Use of time for practice: group needs
8. Use of time for practice: individual needs
9. Group size
10. Number of class meetings
11. Length of meetings
12. Duration of program: number of weeks
13. College credit given
14. a. Program compulsory
    b. Program voluntary
15. Total hours of instruction

While program reporting of these variables was still not found in many of the studies, Program Operational Factors were reported more frequently than Content Factors. The first eight operational factors were not found as frequently as the last eight factors listed above in the program descriptions. However, reporting of these operational factors did permit the analysis to continue without further modifications. The

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\(^{16}\)Fairbanks, 1974, loc. cit.
form used for this aspect of the analysis has been included in Appendix D.

IV. DATA AND INSTRUMENTATION

Dependent Variables

The effect of college reading-study programs was reported in one or combinations of the following dependent variables: (1) changes in reading rate and/or comprehension, (2) changes in reading efficiency which was computed by multiplying rate times comprehension, (3) changes in grade point average following instruction, (4) changes in attrition rates following instruction, and (5) combinations of the above. The mean and standard deviation scores from those studies which included such data were added to the individual (working) chart prepared for each study.

A description of each study was then prepared which summarized the following aspects of the investigation: (1) the author, date, and place of the investigation, (2) the research control rating, (3) a brief description of content factors, (4) a brief description of operation factors, and (5) a brief summary of the effects of instruction. These charts were included in Chapter 2 of this investigation under the following categories: Corrective Programs (pages 54-82); Academic Support Programs (pages 83-100); Developmental Programs (pages 101-130); and Unclassified Programs (pages 131-138).

The diversity of college reading-study programs was
noted previously, as well as the apparent belief on the part of some investigators that such diversity has defied synthesis and integration. During this phase of the study, the author noted patterns of student description and the content of programs that appeared to lend themselves to synthesis using the categories noted above.

**Instrumentation**

Each study was analyzed to determine the test measures used to determine program effect. In nearly all cases the tests were identified, however, some exceptions were noted: Sawyer (1969)\(^\text{17}\) reported using "alternate forms of a reading examination" to measure reading rate, comprehension and reading efficiency but did not identify the examination used; Santucci (1972)\(^\text{18}\) used an unspecified adjective check list; Hunter (1975)\(^\text{19}\) reported reading efficiency rates but did not name the measure used to obtain

\(^{17}\) Robert 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," U.S. Educational Resources Information Center, ED 031 385, 1969.


\(^{19}\) Margaret J. Hunter, "The Effect of Speed Reading and College Reading/Study Skills Instruction on Grade Point Average," (Unpublished doctoral dissertation, University of North Colorado), University Microfilms, Ann Arbor, Michigan, 1975, 75-23,314.
them and Eanet (1976)\textsuperscript{20} and Gerber (1966)\textsuperscript{21} developed their own instruments.

Tests used in the studies to measure reading rate, comprehension, vocabulary and/or total reading skill included the following:

Braam-Sheldon, Flexibility of Reading Test, Forms 1, 2, 3

Cooperative English Test, Forms C2 and 2B, Reading Comprehension Section

Cooperative Reading Comprehension Test, Form 1B and 1C

Davis Reading Test (1962)

Diagnostic Reading Test (Revised 1963) Forms C and B, Survey Section

Gates Reading Survey, Forms 1 and 2

Interpretation of Natural Sciences, Forms X35 and Y35

Iowa Silent Reading Test, Forms A and B

McGraw-Hill Basic Skills System, Test of Reading Efficiency


Miller, Reading Efficiency Test, Forms 1, 2, 3, History Section

Nelson-Denny Reading Test, Forms A and B
Raygor and Schick, Reading Efficiency Test (1970)
Robinson-Hall Reading Test of History, Forms "Canada" and "Russia"
Van Wagenen, Rate of Comprehension Test, Forms D, C, B

Study habits and attitude inventories were frequently used in conjunction with other program effects. The list of such instruments as supplied by the sixty-six program reports included the following:

Brown-Holtzman Survey of Study Habits and Attitudes
California Study Methods Inventory
Effective Study Test
Estes Scale to Measure Attitudes in Reading (1971)
Peifer Reading Attitude Inventory, Advanced form
Preston and Botel Study Habits Checklist
Wrenn Study Habits Inventory

Several studies examined personality and behavioral aspects of student participation as they might relate to reading-study instruction. The measures used in these studies were as follows: Feinberg, Long and Rosenheck (1962)\textsuperscript{22} used

\textsuperscript{22}M.R. Feinberg, M.R. Long and V. Rosenheck, "Results of a Mandatory Study Course for Entering Freshmen, Journal of Developmental Reading, 1962, pp. 95-100.
Appel's Personality Inventory; Sosebee (1963)\textsuperscript{23} used "an attitude survey,"; Durkee (1966)\textsuperscript{24} used several inventories of College Maturity and Academic Adjustment; Church (1970)\textsuperscript{25} used self-adjustment inventories; Santucci (1972)\textsuperscript{26} reported using "various behavioral indices,"; Brandt (1975)\textsuperscript{27} used Rotter's Internal-External Personality Scale. These aspects of investigation were not included in this study as they were considered extraneous to the central investigation.

Data Collection Methods

Typically in both Corrective and Developmental studies the student participants and a comparison or control group were given a reading test which measured their rate of reading and their comprehension for several types of

\textsuperscript{23} Allen L. Sosebee, "Four Year Follow-up of Students in the Indiana University," (Unpublished doctoral dissertation, Indiana University), University Microfilms, Ann Arbor, Michigan, 1963, 64-5142.


\textsuperscript{26} Santucci, op. cit.

\textsuperscript{27} James D. Brandt, "Internal Vs. External Locus of Control and Performance in Controlled and Motivated Reading Rate Improvement Instruction," Journal of Counseling Psychology, (September 1975), 22, pp. 377-383.
reading required at the college level (i.e. fictional material vs. scientific or technical material). Often measures of total reading skill were included; these were frequently combinations of rate, comprehension and vocabulary measures. The extent of vocabulary knowledge was also included in some initial measures.

Following treatment, which varied widely in hours of participation, posttests were administered using alternate forms of the same test; gain measures were calculated by subtracting the pre-test score from the posttest score.

Students were also compared on Grade Point Average (GPA) changes prior to and following instruction. Several studies utilized cumulative and/or distributed grade point ratios in conjunction with GPA figures, and several studies used Quarterly Point Ratios or Averages. Benefits of instruction which were not reported in terms of mean gain scores were not included in this analysis.

V. HYPOTHESES AND ANALYSIS

The hypotheses tested in this investigation included the following:

\( H_1 \): There is no difference between the mean gains of the reported dependent variables (outcome measures) for the treatment and comparison groups.

\( H_2 \): There is no difference between the mean gains for treatment and comparison groups in the following variables:
Hypotheses one and two were tested by analysis of variance of the effect sizes following the Meta-Analysis rationale.

\[ H_3: \text{There is no relationship between program effectiveness and the following six Program Content Factors:} \]

1. Word Study/Vocabulary
2. Study Skills
3. Notetaking
4. Critical Reading Skills
5. Reading in Content Areas
6. Rate/Flexibility

\[ H_4: \text{There is no relationship between program effectiveness and the seventeen Program Operation Factors listed below:} \]

1. Tests used diagnostically
2. Students informed of strengths and weaknesses
3. Student participation in planning
4. Student participation in evaluation
5. Use of time for lecture and demonstration
6. Use of time for discussion
7. Use of time for practice: Group needs
8. Use of time for practice: Individual needs
9. Size of group
10. Number of class meetings per week
11. Length of class meeting
12. Duration of program
13. College credit given
14. a. Program compulsory: all freshmen
   b. Program compulsory: "High-risk freshmen"
   c. Program voluntary

15. Total hours of instruction

Hypotheses three and four were tested by the Pearson and Point Biserial Correlation Coefficient. The .05 level of significance was adopted to test the null hypotheses.

Summary of the Procedure of the Investigation

The problem investigated in this study involved use of the Meta-Analysis procedure to integrate the vast body of reading-study literature in order to determine if college and university reading and study programs generally proved beneficial to those participating in them.

The overall procedure involved: (1) collecting and analyzing published research reports and dissertations which reported the effectiveness of such instructional programs in quantifiable terms, (2) identifying program content and operational factors in those studies which met the research design criteria, and (3) integrating these findings into a model(s) for developing and/or assessing college and university reading-study programs.

Chapter 4 will identify the results of this analysis.
Chapter 4

RESULTS OF THE INVESTIGATION

In this investigation the Meta-Analysis procedure was employed in order to integrate the reported results of published reading-study literature to determine if college and university reading and study programs generally proved beneficial to those participating in them. Extensive search procedures were utilized to recover these data; however, the resulting number of studies which met the specified criteria was more limited than had been anticipated. Numerous studies either did not have adequate research controls, did not present quantifiable data, or did not provide sufficient data upon which to apply the Meta-Analysis statistic. Twenty-eight studies comprised the sample for the Meta-Analysis, and this sample represented 6,046 students of which 3,390 were participants in a reading-study program and 2,656 served as controls.

The purpose of this chapter is to report the results of this procedure and to present data necessary for interpretation of the findings. The chapter is organized as follows: (1) Findings Relative to Hypothesis 1; (2) Findings Relative to Hypothesis 2; (3) Findings Relative to Hypothesis 3; (4) Findings Relative to Hypothesis 4; and (5) Summary of the Findings.
I. FINDINGS RELATIVE TO HYPOTHESIS 1

Hypothesis 1 stated: There is no difference between the mean gains of the reported dependent variables (outcome measures) for the treatment and comparison group.

The Meta-Analysis procedure proposed by Glass involved the collection of effect size data for each treatment. The effect size was defined as the mean difference between treated and control subjects divided by the standard deviation of the control group. For hypothesis 1, whenever the treatment group was measured on more than one dependent variable, composite effect sizes were computed. These were defined as the mean of all reported effect sizes. One composite effect size for each treatment group was figured; thus all dependent variables, regardless of their specific nature, were pooled in order to determine what multiple benefits were derived from instruction. The dependent t-test was used to determine if the criterion for the two groups differed significantly.

Table 8 contains the composite statistical findings for the Meta-Analysis for this hypothesis. Sixty-six treatment effect sizes were computed from 28 individual studies, which represented the total sample of 6,046 students who were reportedly enrolled in college reading-study programs.

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2 Ibid., p. 6.
from 1960-1977 or who served as subjects in control groups. The mean effect size for these sixty-six treatments was 0.94 with a standard deviation of effect size of 1.76. On the average the treated group mean was .94 standard deviations above the control group mean on the composite of all outcome variables. Statistically significant (.05) gains were made by treated subjects over the untreated control subjects. Hypothesis 1 was thus rejected. Reading-study instruction on college and university campuses did prove beneficial for those students who participated in such treatment.

Table 8

Effects Of College Reading-Study Instruction:
Integration Of Effect Sizes Of All Dependent Variables

<table>
<thead>
<tr>
<th>Mean Effect Size</th>
<th>.941</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Deviation of Effect Size</td>
<td>1.763</td>
</tr>
<tr>
<td>Standard Error of Effect Size</td>
<td>.269</td>
</tr>
<tr>
<td>t-ratio</td>
<td>3.498</td>
</tr>
<tr>
<td>Critical value for t-test</td>
<td>1.999</td>
</tr>
<tr>
<td>Degrees of Freedom</td>
<td>65</td>
</tr>
</tbody>
</table>

Figure 1 further illustrates the effect of instruction as an assumed normal distribution following the reporting method introduced by Smith and Glass. It does not represent a distribution of individual scores, but rather a distribution of effect sizes as reported in the 28 studies examined. The

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3 Figure adapted from Gene V. Glass, op. cit., (1976), p. 4.
average of all types of instruction moved the treated group above 83 percent of untreated control groups as pictured in Figure 1.

This represents the composite effect of reading-study instruction in relation to untreated control groups based on the 66 effect sizes computed from 28 individual studies of students enrolled in college reading-study instruction programs.

![Composite Effect of Reading-Study Instruction](image)

**Figure 1**

The composite effect of reading-study instruction in relation to untreated control groups, based on 66 effect sizes computed from 28 individual studies of students enrolled in college and university reading-study programs. It represents 6,046 treated and untreated subjects.

\[ \sigma = \text{Standard Deviation} \]
II. FINDINGS RELATIVE TO HYPOTHESIS 2

Hypothesis 2 stated: There is no difference between the mean gains for treatment and comparison groups in the following variables:

1. Reading Rate
2. Comprehension
3. Reading Efficiency
4. Grade Point Average
5. Vocabulary
6. Study Habits

This hypothesis focused on dependent variables, the outcome measures being assessed, to answer questions relating to the specific nature of gains made by participants in the individual studies. Only five studies reported gains in terms of Reading Efficiency, a variable of interest which had been computed by multiplying rate times comprehension. This information was transformed to provide both rate and the comprehension scores, and thus Reading Efficiency was deleted from the variables considered in the Meta-Analysis. This hypothesis was also tested using the dependent t-ratio statistic. Table 9 reports the findings for the five outcome measures examined.
Table 9
The Effects Of College/University Instruction In Reading-Study Skills: Integration Of Effect Sizes For Five Dependent Variables

<table>
<thead>
<tr>
<th></th>
<th>READING RATE</th>
<th>COMPREHENSION</th>
<th>GRADE POINT AVERAGE</th>
<th>VOCABULARY</th>
<th>OTHER STUDY HABITS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean Effect Size</strong></td>
<td>1.947</td>
<td>.349</td>
<td>.525</td>
<td>.459</td>
<td>.273</td>
</tr>
<tr>
<td><strong>Standard Deviation of Effect Size</strong></td>
<td>4.130</td>
<td>.551</td>
<td>.913</td>
<td>.513</td>
<td>.419</td>
</tr>
<tr>
<td><strong>Standard Error of Effect Size</strong></td>
<td>.810</td>
<td>.123</td>
<td>.210</td>
<td>.171</td>
<td>.148</td>
</tr>
<tr>
<td><strong>t-ratio</strong></td>
<td>2.403*</td>
<td>2.837*</td>
<td>2.500*</td>
<td>2.684*</td>
<td>1.844</td>
</tr>
<tr>
<td><strong>Critical Value</strong></td>
<td>2.060</td>
<td>2.093</td>
<td>2.101</td>
<td>2.306</td>
<td>2.365</td>
</tr>
<tr>
<td><strong>Degrees of Freedom</strong></td>
<td>25</td>
<td>19</td>
<td>18</td>
<td>8</td>
<td>7</td>
</tr>
</tbody>
</table>

*Indicates level of significance at .05
Significant gains were made for treatment groups over the control groups in four of the five variables tested; in Reading Rate ($t = 2.405$); in Comprehension ($t = 2.84$); in Grade Point Average ($t = 2.5$) and in Vocabulary ($t = 2.68$). The mean effect size gains made in Comprehension, Grade Point Average and Vocabulary appear to be comparable, while gains made for Reading Rate are appreciably larger. The second null hypothesis was rejected due to the significant gains obtained.

Gains made in category five, Other Study Habits, were not statistically significant. Due to the small number of studies reporting, statistical significance was not expected for the seven effect sizes included for this variable. Of the seven studies, six measured changes in Study Skills Habits and Attitudes, and one measured mid-term grade changes.

To illustrate these gains graphically assumed normal sampling distributions were drawn following the Smith-Glass procedure. These represent the percentile change students derive from such treatment. Figure 2 portrays the findings relating to changes in Reading Rate and Comprehension, and Figure 3 the changes in Grade Point Average, Vocabulary and Study Habits as compared to Control groups.
Figure 2

Normal curves depicting the effects of treatment with college and university students in relation to Reading Rate and Comprehension benefits as compared to untreated control groups.

σ = Standard Deviation
Figure 3

Normal curves depicting the effects of treatment with college-university students in relation to Grade Point Average, Vocabulary and Study Habit benefits as compared to untreated control groups.

\( \sigma = \) Standard Deviation
The dependent variable which registered the largest gain was in Reading Rate moving treated students 1.94 standard deviations, or 97 percent above the control group on this single variable. Twenty-six studies measured Rate changes prior to and following instruction. The standard deviation of this Rate change indicated a considerable range in reported treatment effects from a minimum of -0.02 to maximum of 21.43, noticeably larger than the range reported for the four other variables. The analysis of data in Table 10 suggests that some reported studies were greatly superior to others in changing students reading rate patterns. It may also suggest that reading rate responds more readily to treatment and/or testing than do the other variables measured.

Typically students in treatment groups would increase their reading rate by 100-150 words per minute (WPM). These figures were obtained by figuring a mean standard deviation (67.04) for all twenty-six studies reporting rate effect sizes and multiplying this figure by the obtained mean effect size (1.947) which produced an average WPM gain of 130.52.

The gain noted for Comprehension was also statistically significant. Interpreted in relationship to Reading Rate gains it indicates, as other researchers have noted, that students receiving instruction in college reading-study programs increased their rate appreciably with smaller, yet also significant increases in comprehension. In other words, they were able to read college materials faster with greater understanding.
Table 10

Range And Standard Deviations Of Effect Sizes
For All Dependent Variables In Twenty-eight
Studies Included In The Meta-Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Standard Deviation</th>
<th>Minimum Effect Size</th>
<th>Maximum Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Rate</td>
<td>4.130</td>
<td>-0.02</td>
<td>21.43</td>
</tr>
<tr>
<td>Comprehension</td>
<td>.551</td>
<td>-0.38</td>
<td>1.59</td>
</tr>
<tr>
<td>Grade Point Average</td>
<td>.913</td>
<td>-0.75</td>
<td>2.50</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>.513</td>
<td>-0.12</td>
<td>1.50</td>
</tr>
<tr>
<td>Study Habits</td>
<td>.419</td>
<td>-0.48</td>
<td>.73</td>
</tr>
</tbody>
</table>

Mean gains in benefits as measured by Grade Point Average effect sizes were statistically significant and were an unexpected benefit of instruction identified by the Meta-Analysis. Grade Point Average mean gains made by the treatment groups were gathered at the termination of instruction although several studies collected data at additional times following instruction to determine cumulative benefits. For the purpose of this investigation, only immediate post-instruction Grade Point Average effect size was computed. Thus additional post-instruction losses or benefits were not reflected in this statistic.

Based on the definition of effect size as \((\bar{X}_E - \bar{X}_C) / S\), an estimate of the magnitude of the Grade Point Average gain was obtained by multiplying the mean GPA standard deviation by the obtained mean effect size. This equation yielded a typical GPA advantage of .37 which would be made by students enrolled in reading-study instruction over non-participants. As noted previously, this advantage does not include any
cumulative gains realized by student’s increased ability to read text materials and to comprehend more efficiently which might be reflected in post-instruction grade point averages measured over longer time sequences, for example over one, two or three semesters.

**Supportive Data**

Statistics were also collected from fifteen individual studies, representing an additional 1,165 students, which reported their effects in quantifiable form but did not utilize control groups in their investigations and were therefore not included in the overall Meta-Analysis. They have been reported here to illustrate the similarity of findings for hypothesis 2.

Treatment Gain Ratios were computed for this group utilizing a formula suggested by B.H. Hopkins, University of Pacific School of Education. The formula used for this calculation was:

\[
\text{Treatment Gain Ratio} = \left( \frac{\bar{X}_{\text{post}} - \bar{X}_{\text{pre}}}{S_{\text{pre}}} \right)
\]

In Table 11 the findings are presented from a comparison of gains made by groups with controls and groups without controls on the five outcome measures tested in hypothesis 2.
Table 11
Relative Treatment Gain Ratios Comparing Treatment With Control Groups And Treatment Without Control Groups

<table>
<thead>
<tr>
<th>Treatment Gain Ratio With Control Groups</th>
<th>Treatment Gain Ratio Without Control Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean = 1.94 N = 26 Reading Rate</td>
<td>Mean = 2.23 N = 13</td>
</tr>
<tr>
<td>.35 20 Comprehension</td>
<td>.49 13</td>
</tr>
<tr>
<td>.53 19 Grade Point Average</td>
<td>.55 5</td>
</tr>
<tr>
<td>.46 9 Vocabulary</td>
<td>.73 11</td>
</tr>
<tr>
<td>.27 7 Study Habits</td>
<td>.40 5</td>
</tr>
</tbody>
</table>

The similarity of these findings lends additional confirmation to this hypothesis based on the effect size. College students do benefit significantly by reading-study instruction as measured by the dependent variables most often examined. The reported variables used were Reading Rate, Comprehension, Grade Point Average, Vocabulary and Study Habits. Figure 4 further illustrates graphically the similarity of these findings using a histogram.
The histogram illustrates the relative comparison of gains for groups with control and groups without controls on the five outcome measures examined.
III. FINDINGS RELATIVE TO HYPOTHESIS 3

This hypothesis stated: There is no relationship between measured program effectiveness and the following six Program Content Factors:

1. Word Study/Vocabulary
2. Study Skills
3. Notetaking
4. Critical Reading Skills
5. Reading in Content
6. Rate/Flexibility Areas

The majority of studies did not sufficiently report content factors for the investigator to evaluate them without making broad assumptions not deemed appropriate to scientific inquiry. It should be noted, however, that when a content factor was not reported, this did not mean it had not been included in the instructional process. Findings which supported hypothesis 3 were not conclusive due to the small number of studies providing adequate information to evaluate using Fairbanks' list.

The obtained Point Biserial Correlation Coefficients between inclusion of the six Program Content Factors and effect size are presented in Table 12. An examination of this table will indicate that the magnitude of the coefficients is consistently small. The researcher utilized a reporting form with two coded numbers: the number 1 signified the reported inclusion of the factor, and 9 indicated inclusion was uncertain. Thus a negative correlation coefficient indicated studies which included that specific factor made greater gains.
Table 12

Point Biserial Correlation Coefficients Of Six Program Content Factors And Program Effects (N = 66)

<table>
<thead>
<tr>
<th>Program Content Factors</th>
<th>Rate</th>
<th>Compre.</th>
<th>GPA</th>
<th>Vocab.</th>
<th>Other</th>
<th>Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCF 1 Word Study</td>
<td>0.022</td>
<td>0.022</td>
<td>0.076</td>
<td>0.023</td>
<td>-0.014</td>
<td>0.044</td>
</tr>
<tr>
<td>PCF 2 Study Skills</td>
<td>0.137</td>
<td>-0.020</td>
<td>-0.137</td>
<td>0.159</td>
<td>-0.190</td>
<td>0.170</td>
</tr>
<tr>
<td>PCF 3 Notetaking</td>
<td>0.125</td>
<td>0.124</td>
<td>0.020</td>
<td>0.135</td>
<td>-0.095</td>
<td>0.144</td>
</tr>
<tr>
<td>PCF 4 Critical Reading</td>
<td>0.031</td>
<td>-0.088</td>
<td>0.099</td>
<td>0.105</td>
<td>0.018</td>
<td>0.069</td>
</tr>
<tr>
<td>PCF 5 Content Reading</td>
<td>-0.003</td>
<td>-0.391*</td>
<td>-0.063</td>
<td>-0.375*</td>
<td>0.068</td>
<td>-0.042</td>
</tr>
<tr>
<td>PCF 6 Rate Instruction</td>
<td>-0.054</td>
<td>-0.345*</td>
<td>0.131</td>
<td>-0.181</td>
<td>0.135</td>
<td>-0.084</td>
</tr>
</tbody>
</table>

*Critical value for r with N = 66 is \(|r| \geq .250\)

Three significant negative correlations were obtained between inclusion of content factors and effect size. These indicated: (1) Comprehension was beneficially influenced by instruction in Content Reading (PCF 5) and (2) by Rate Instruction (PCF 6); (3) Vocabulary effect sizes also appeared to have been influenced by instruction in Content Reading (PCF 5). However correlations for these variables were inconclusive, again due to the small number of studies reporting Program Content Factors. Slightly greater effectiveness was indicated by programs reporting inclusion of the
Content Factors over those which did not include those Factors or did not report inclusion, although they were not of statistical significance.

IV. FINDINGS RELATIVE TO HYPOTHESIS 4

This hypothesis stated: There is no relationship between program effectiveness and the fifteen Program Operation Factors listed below:

1. Tests used diagnostically
2. Students informed of strengths and weaknesses
3. Student participation in planning
4. Student participation in evaluation
5. Use of time for lecture and demonstration
6. Use of time for discussion
7. Use of time for practice: Group needs
8. Use of time for practice: Individual needs
9. Size of group
10. Number of class meetings per week
11. Length of class meetings
12. Duration of program
13. College credit given
14. a. Program compulsory: All freshmen
   b. Program compulsory: "High-risk freshmen"
   c. Program voluntary
15. Total hours of instruction
Program Operation Factors 1 through 8

Table 13 reports the Point Biserial Correlation Coefficients obtained for inclusion of the first eight variables of hypothesis 4 and effect size. The reporting form utilized in analyzing these factors was the same one used in analysis of Program Content Factors. Where factors were reportedly included they were coded 1; where the factors were uncertain, they were coded 9. The number of studies reporting inclusion of factors 1 through 8 was judged small. Thus the analysis of those Operation Factors dealing with the use of class time and the extent of student participation yielded inconclusive results.
Table 13

Point Biserial Correlation Coefficients Of Eight Program Operation Factors And Program Effects

\( (N = 66) \)

<table>
<thead>
<tr>
<th>Program Operation Factor</th>
<th>Rate</th>
<th>Compre.</th>
<th>GPA</th>
<th>Vocab.</th>
<th>Other</th>
<th>Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>POF 1 Diagnosis</td>
<td>.021</td>
<td>-.190</td>
<td>-.158</td>
<td>-.138</td>
<td>-.253*</td>
<td>.018</td>
</tr>
<tr>
<td>POF 2 Ss Informed</td>
<td>.031</td>
<td>-.091</td>
<td>-.074</td>
<td>-.062</td>
<td>-.010</td>
<td>.021</td>
</tr>
<tr>
<td>POF 3 Ss Planned</td>
<td>.001</td>
<td>.014</td>
<td>.003</td>
<td>-.143</td>
<td>.070</td>
<td>-.015</td>
</tr>
<tr>
<td>POF 4 Ss Evaluated</td>
<td>.022</td>
<td>.010</td>
<td>-.134</td>
<td>-.105</td>
<td>-.051</td>
<td>-.055</td>
</tr>
<tr>
<td>POF 5 Lecture &amp; Demo.</td>
<td>.071</td>
<td>-.271*</td>
<td>-.199</td>
<td>-.118</td>
<td>-.087</td>
<td>.004</td>
</tr>
<tr>
<td>POF 6 Discussion</td>
<td>.051</td>
<td>.012</td>
<td>-.273*</td>
<td>.197</td>
<td>-.108</td>
<td>-.004</td>
</tr>
<tr>
<td>POF 7 Group Practice</td>
<td>-.046</td>
<td>-.231*</td>
<td>.018</td>
<td>-.165</td>
<td>.143</td>
<td>-.128</td>
</tr>
<tr>
<td>POF 8 Ind. Practice</td>
<td>-.027</td>
<td>-.339*</td>
<td>.134</td>
<td>-.205</td>
<td>.221</td>
<td>.006</td>
</tr>
</tbody>
</table>

*Critical value for \( r \) with \( N = 66 \) is \(|r| \geq .250\)

Program Operation Factors 1 through 8 having to do with student's use of class time and the extent of student participation indicate some favorable influence on effect size measures of Comprehension, Grade Point Average, Vocabulary and Study benefits. Only four of these relationships were of statistical significance. Three of the eight factors were of statistical significance in Comprehension.
effect size. This suggests that such diagnostic instructional techniques and involvement of students does significantly enhance student comprehension in reading-study courses. Seven of the eight factors had low negative correlations with Vocabulary effect size indicating greater effectiveness in developing Vocabulary skills was found in programs including these content factors, although none was of statistical significance. In every case effectiveness of the program favored those studies which reported inclusion of diagnostic and participatory instructional methods, although few relationships of statistical significance were obtained.

Program Operation Factors 9 through 15

Although additional information was reported from a greater number of studies for operational factors 9 through 15 which dealt with (1) the size of groups, (2) the number and length of class meetings and (3) the duration of programs, the sample reporting complete data for all factors was still disappointingly small. The findings were necessarily inconclusive. Table 14 reports the correlation coefficients obtained for variables 9 through 15 of hypothesis 4 with the number of studies reporting that factor.

Group Size (POF 9). No significant findings were identified comparing the size of the group (POF 9) with program effects. These data do not warrant a conclusion that small groups made greater gains. The divisions utilized to identify
group sizes were as follows: groups from 1 - 5; 6 - 10; 11 - 20; 20 or more. The majority of studies (N = 38) reported instructional groups of 11 - 20 or more. These divisions, viewed retrospectively, were not adequate to identify the more individualized nature of some programs and were restricted by the reporting problems. Interestingly, program reporting for this factor was generally complete with 53 of the 66 treatments reporting group size. Future analyses of group size should reflect program organization which provide both individualized and small group instruction in combination with large group sessions.

**Number of weekly class meetings (POF 10).** The number of class meetings per week influenced Reading Rate and overall benefits significantly. Two or three class meetings per week appeared to produce greater gain in general, and in Rate gains in particular. The majority of studies (N = 35) reported meeting 2 or 3 times weekly; only four studies reported meeting as little as once a week and four reported meeting five times weekly.
Table 14
Correlation Coefficients Of Seven Program Operation Factors And Program Effects

<table>
<thead>
<tr>
<th>Program Operation Factor</th>
<th>Rate</th>
<th>Compre.</th>
<th>GPA</th>
<th>Vocab.</th>
<th>Other</th>
<th>Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>POF 9 Group Size</td>
<td>0.26</td>
<td>0.46</td>
<td>-0.18</td>
<td>0.22</td>
<td>0.25</td>
<td>0.23</td>
</tr>
<tr>
<td>N=24</td>
<td>N=18</td>
<td>N=14</td>
<td>N=7</td>
<td>N=7</td>
<td>N=35</td>
<td></td>
</tr>
<tr>
<td>POF 10 Number Meets</td>
<td>-0.54*</td>
<td>0.11</td>
<td>-0.51</td>
<td>0.59</td>
<td>-0.53</td>
<td>-0.44</td>
</tr>
<tr>
<td>N=22</td>
<td>N=19</td>
<td>N=12</td>
<td>N=8</td>
<td>N=7</td>
<td>N=31</td>
<td></td>
</tr>
<tr>
<td>POF 11 Length/Hours</td>
<td>0.73*</td>
<td>0.04</td>
<td>0.27</td>
<td>0.53</td>
<td>0.40*</td>
<td></td>
</tr>
<tr>
<td>N=25</td>
<td>N=19</td>
<td>N=13</td>
<td></td>
<td>N=7</td>
<td>N=35</td>
<td></td>
</tr>
<tr>
<td>POF 12 Duration/Weeks</td>
<td>0.005</td>
<td>0.19</td>
<td>0.13</td>
<td>0.33</td>
<td>-0.53</td>
<td>-0.015</td>
</tr>
<tr>
<td>N=26</td>
<td>N=20</td>
<td>N=15</td>
<td>N=9</td>
<td>N=7</td>
<td>N=38</td>
<td></td>
</tr>
<tr>
<td>POF 13 Credit</td>
<td>0.11</td>
<td>0.36</td>
<td>0.28</td>
<td>-0.81</td>
<td></td>
<td>0.11</td>
</tr>
<tr>
<td>N=15</td>
<td>N=12</td>
<td>N=12</td>
<td>N=3</td>
<td></td>
<td>N=25</td>
<td></td>
</tr>
<tr>
<td>POF 14 Attendance**</td>
<td>0.53*</td>
<td>0.25</td>
<td>-0.41</td>
<td>-0.10</td>
<td>0.56</td>
<td>0.27</td>
</tr>
<tr>
<td>N=21</td>
<td>N=15</td>
<td>N=12</td>
<td>N=5</td>
<td>N=6</td>
<td>N=31</td>
<td></td>
</tr>
<tr>
<td>POF 15 Total Hours</td>
<td>-0.33</td>
<td>0.05</td>
<td>0.03</td>
<td>0.39</td>
<td>-0.35</td>
<td>-0.19</td>
</tr>
<tr>
<td>N=26</td>
<td>N=20</td>
<td>N=14</td>
<td>N=9</td>
<td>N=8</td>
<td>N=38</td>
<td></td>
</tr>
</tbody>
</table>

*Statistically significant at 0.05
**Compulsory or Voluntary

Length of Class Meetings/Hours (POF 11). The length of each class meeting was favorably associated with both Rate and Composite benefits. Two hour sessions appeared to produce the most favorable results. However, meetings were reported to have lasted for one hour by forty-four studies and only seven studies reported meeting two hours or more.

Correlations with the Duration of Program/Weeks (POF 12), Credit or non-credit status of Programs (POF 13) and Total Hours of Instruction (POF 15) and effect size did
not yield any statistically significant findings. However POF 12, the Duration of Programs suggests programs less than a full semester may produce greater benefits, and this question should be explored in greater depth when the reporting issue has been resolved.

Required or Voluntary Attendance (POF 14). A slight tendency was observed in volunteer programs to produce greater gains in Rate, but this finding was not consistent across other variables. The required attendance category included two divisions, those programs requiring participation from "all freshmen," and those requiring such participation from "high-risk students." Twenty-six studies reported voluntary attendance in their reading-study programs and twenty required participation. Of these twenty, nine required attendance from "all freshmen" and eleven required attendance from students identified as low-scoring, special admission and/or "high-risk" students. An additional twenty studies did not comment on this factor.

Although findings from hypothesis 4 were generally inconclusive, favorable program tendencies and benefits in Reading Rate and in Composite benefits were indicated in those programs meeting two to three times per week for less than a full semester. Six additional computer runs were made subsequent to these initial findings. The purpose of this sub-analysis was to check any significant findings identifiable in Developmental Programs where reporting appeared to be more complete. These probes all yielded similar results to the
finding reported above. Incomplete program reporting has limited the conclusions which can be drawn from this aspect of the investigation.

V. SUMMARY OF THE FINDINGS

The purpose of this investigation, as stated in Chapter 1, was to integrate the reported results of reading-study literature in order to determine to what degree college and university programs proved beneficial to participants. The procedure utilized for this investigation was the Meta-Analysis, a recently introduced statistical procedure which permitted the investigator to compare effects of treatment and to integrate overall benefits of various treatments. Through this procedure 28 studies yielding 66 effect sizes based on a sample of 6,046 students were subjected to the statistical analysis.

Based upon this analysis, null hypotheses 1 and 2 were rejected: program effects were found to be significant in those studies reporting outcome measures. The average student receiving reading-study instruction showed a 1.763 standard deviation benefit over the untreated group. In other words, the average student receiving college reading-study instruction was "better off" than 83 percent of untreated students. Treatment gains also significantly surpassed control gains in four of the five variables where adequate data was reported. These gains were in Reading Rate, Comprehension, Grade Point Average and Vocabulary, and
these gains appeared to be relatively consistent when compared to treated groups without controls. Reading Rate gains exceeded all other variables, on the average moving treated students to the 97th percentile over control groups without treatment.

For analysis of hypothesis 3 and 4 it was found that the majority of studies simply did not adequately report either content or operational factors to allow any conclusive findings to be drawn. Several significant correlations were obtained from those aspects of instruction which were reported more completely. These indicated (1) A slightly greater effectiveness was identified with programs reporting inclusion of the six Program Content Factors (listed on page 227), and (2) Effectiveness of the program favored those studies which reported inclusion of diagnostic and participatory instructional methods (discussed on pages 231-232). Reading-study instruction in college and universities does significantly benefit participants, but statements as to program factors which influence program effect were not identified in this study due to the serious deficiency of reporting content and operation factors.
Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

While rapid growth of reading-study programs on college and university campuses across the United States has occurred within the past few decades, this growth has frequently been characterized in professional writing by diversity in methods, materials, content and operation. The primary problem addressed in this study has been to integrate the findings from this literature to determine if college and university programs generally were beneficial to students participating in them, and to inquire into the following sub-problems:

1. For what student groups were college-reading programs designed? Were programs designed to fulfill remedial/corrective, supportive, developmental or unspecified functions?

2. What program content and program operation factors were identified within the published reports?

3. What relationship, if any, existed between program content and operation factors and reported program effects?

Extensive search procedures, both manual and computer assisted, were utilized to identify research reports and dissertations published between 1960-1977 relating to the effectiveness of college reading-study programs. It was
assumed those published reports and dissertations represented a typical range of college reading-study programs in the United States during that period. The question was raised if perhaps only the more successful programs reported their findings or if publishers might exercise bias by selecting only successful studies for publication. Care was taken in both the manual and computer literature search to include as large a base of studies as possible, and both published articles and dissertations were included. In addition it was noted that of the twenty-eight control studies examined in depth and included in the Meta-Analysis, fifteen reported negative effects as compared to their control groups. The literature examined thus appears to have included some representative samples of both "successful" and "unsuccesful" programs.

Sixty-six studies were located which utilized adequate to good measures of research control in reporting program results. Of these, twenty-eight reported their data in useable statistical form, which included reporting mean gains between treatment and comparison groups in one or a combination of the following five variables: changes in Reading Rate, in Comprehension, in Grade Point Average, in Vocabulary and in Study Habits. These twenty-eight studies, which included sixty-six treatment effects, represented 6,046 students enrolled in four year college or university reading-study programs or who served as control groups. An additional fifteen studies, representing 1,165 students,
reported program effects in useable quantifiable form but did not use control groups in their investigations. These were not included in the Meta-Analysis but were analyzed and reported in Chapter 4 in order to compare their similarity of findings for hypothesis 2.

To integrate these data the Meta-Analysis procedure introduced by Glass was utilized. "Meta", a Greek word meaning beyond, above or over, was used to refer to analysis of a large collection of individual statistical results for the purpose of integrating their findings.¹ Glass proposed this technique, beyond both primary and secondary analyses of data, in order to "extract the message" behind the vast body of research studies.²

The procedure utilized "effect sizes" statistics for each treatment outcome reported. This "effect size" as measured on the outcome variables (for example, Reading Rate) was the difference between treated and untreated groups divided by the within group standard deviation. Each effect size thus became an observation and inferential statistics were applied. The dependent t-test was used to determine if the treated groups differed significantly from their comparison groups. Each study was also examined for reported inclusion of (1) the six content factors, (2) the seventeen operational factors, and for (3) program effects.

²Ibid.
Serious problems of program reporting were noted during this analysis phase of the study. Published reports and dissertations of college reading-study programs frequently did not include sufficient information to permit subsequent investigators to determine program content and operational practices without making broad, unwarranted assumptions. While reports frequently did include lists of the materials used in the program, they often did not specify (or even hint) as to the actual course structure, the sequence of skills taught, course goals, or in other ways indicate the actual content of the reading-study course. The investigator did not assume that skills were included in the course unless they were mentioned, although in several cases the texts used were known by the investigator to have included those specific skills. However, while content and operational practices were not reported as included, the reader is cautioned not to assume they were not taught.

This paucity of reporting information about program content was a limitation to the present investigation. A considerable number of investigators either gave no indication of program content or dismissed course descriptions with broad catalog type generalities which indicated the course consisted of "college reading skills" or "skills designed to benefit college students." While such descriptions would be appropriate in catalogs and one could assume that a reading-study course would include "beneficial reading skills," such ambiguity in reporting professional endeavors was unfortunate. More precision in the area of content reporting
which would enable investigators to know what content a given course included, what made it different from any other, or what treatments contributed to the effect would certainly enhance future analyses. Fairbanks' listing of possible content and operation factors should provide direction in this regard.

After this analysis of individual studies, the resulting statistics were key punched on individual cards and processed through the computer facilities at the University of Pacific. The statistical analysis used was contained in *The Statistical Package for the Social Sciences (SPSS).*

I. CONCLUSIONS

Four hypotheses were tested using these statistical procedures, and the following conclusions have been drawn as a result of this examination:

1. College reading-study programs were found to have statistically significant overall beneficial effects on students participating in such instruction.

2. Treatment groups surpassed untreated groups on four of the five specific variables tested indicating that students who participated in such instruction made greater gains than non-participants in Reading Rate measures, in Comprehension, in Grade Point Averages and in Vocabulary

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measures. Reading Rate gains exceeded all other variables examined, on the average moving treated students to the 97th percentile of control groups without treatment.

3. The majority of studies did not adequately report content and operational factors to allow conclusive findings to be drawn. The number of studies reporting complete program operation and content factors was small; however several significant correlations were obtained with those programs reporting more complete data. For hypothesis 3, programs which reported inclusion of the six content factors appeared to have a slightly greater effectiveness. For hypothesis 4, program effectiveness favored those studies which reported inclusion of diagnostic and participatory instructional methods.

Conclusions for Sub-problem 1

In order to respond to the question posed in sub-problem 1 regarding the student groups for which programs were designed, studies were categorized based on their description of the student population participating in reading-study instruction. The categories utilized were:

(1) Remedial/Corrective Programs which included students designated as low-achievers, "high-risk", "disadvantaged" or students identified by some statistical criteria such as entry scores below the prevailing college admission level;

(2) Academic Support Programs were generally those which identified their population (often second semester freshmen) as students with deficient academic achievement, those on
academic probation due to low grade point averages, or some similar designation; (3) Developmental Programs were typically those designed for all entering freshmen or open to any student seeking to improve reading-study skills; (4) Unclassified were those programs which did not provide sufficient information about the population to fit any of the above categories. All studies in this investigation were reported using this categorization and have been included in the charts in Chapter 2, Review of the Literature.

A statistical analysis comparing effect sizes and program content and operation factors using the classification above did not yield many statistically significant differences between programs, possibly due in part to the small number of studies reporting adequate data. Thus this aspect of the investigation was inconclusive. Further analysis was conducted using Developmental Studies only where reporting appeared to be more complete and utilized more control group data. Again, however, there were no significant findings. Thus, while programs appeared to be identifiably different based on their description of student participants and program function, no statistically significant differences between program effects and the categories of participants were revealed.

Conclusion for Sub-problem 2

Since content and operation factors were not reported adequately in the studies examined, and since no
statistically significant differences in program effects and program categories were identified, a cross-tabulation of programs reporting inclusion of the content and operation factors was made which revealed minor program differences.

**Program Content Factors.** These generalizations about similarities and/or differences of Content have been drawn for programs in all three categories:

1. Approximately one third of Remedial/Corrective programs reporting provided some attention to all content factors.

2. The content of Academic Support Programs appeared to emphasize Study Skills with some attention to Notetaking skills.

3. Those Developmental Programs reporting content factors appeared to emphasize Rate Instruction, Study Skills, Critical Reading, with some attention given to Word Study. Twenty of the twenty-six Developmental Programs reported inclusion of Rate instruction.

**Program Operation Factors.** As noted previously, program operation factors 1 - 8 were not reported by a sufficient number to include in a sub-analysis. Factors 9 - 15 were

* A more complete discussion of operational factors and practices, unrelated to program content and program effect, was given in M.C. Devirian, Gwyn Enright and Guy Smith, "A Survey of Learning Program Centers in U.S. Institutions of Higher Education," Proceedings of the Eighth Annual Conference, ([n.p.]: Western College Reading Association, 1975), pp. 69-76. It has been reviewed on pages 32-34 of this dissertation.
reported more frequently, however, and those program similarities and generalizations were as follows:

1. For Remedial/Corrective Programs, the majority of studies reported groups of 6 - 10 students which met three times weekly for one hour from eight weeks to a semester. Seventeen programs in this category reported offering reading-study programs for academic credit and three reported the course was not offered for credit. Class time was generally used for discussion but included both group and individual practice of whatever skills were being taught.

2. For Academic Support Programs, no pattern of group size or number and length of weekly meetings was discernible in the small number of studies reporting. Programs generally were less than a semester in duration and typically involved non-credit discussion groups. Of the four Supportive programs reporting required or voluntary attendance, three were volunteer and only one was compulsory. Only one program of the seven in this category reported any attempt to diagnostically assess the participants' reading-study problems, although such assessment may have taken place and not been reported.

3. Developmental Programs reported larger size groups, usually 11 - 20 participants or more, and sessions which included both lecture and demonstration as well as opportunity for both group and individual practice. Ten programs reported meeting two times weekly and ten met three times weekly or more, and these meetings usually were for one
hour; only two programs reported two-hour sessions. The majority of Developmental Programs reported eight-week to full semester-length programs with volunteer students receiving credit for attendance.

4. Longer hours of instruction did not appear to influence program effectiveness in any of the program categories examined. Program effectiveness appeared to be related to factors other than length and duration of instruction.

Conclusions for Sub-problem 3

This aspect of the investigation dealt with the relationship between program content and operational factors and reported program effects. While programs were found to have statistically significant benefits to student participants, inadequate program descriptions of the six content factors and fifteen operation factors which influenced these benefits did not permit conclusions to be drawn which were statistically supported. A serious deficiency in program reporting was identified in that the reading-study programs reported in both published literature and unpublished dissertations frequently did not include adequate descriptions of the treatment their participants received. More precision in the reporting of program content and operation factors would enable subsequent investigators to determine what treatments contributed to more effective programs and would certainly enhance program evaluation and analysis. Fairbanks' list of the content and operational
factors appears to be a valid initial compilation of the types of skills reading-study professionals believe "should be taught" in college reading-study programs. It could also serve as a guide for program reporters in determining what actually has been taught and what relationship exists between content and operation factors among more effective programs.

II. RECOMMENDATIONS

As a result of this study, recommendations are offered in the following areas: (1) Recommendations for Further Research and (2) Recommendations for College Reading-Study Programs.

Recommendations for Further Research

The following recommendations for further research have been suggested by the present investigation.

1. The present study attempted to synthesize and integrate findings from an extensive body of reading literature but ended with a disappointingly small number of experimental studies which provided adequate data for the Meta-Analysis procedure. Future Meta-Analyses of college reading-study programs should be undertaken but should include findings from community college and other post-secondary college settings which provide instruction to a broader population group to determine if such instruction (a) does indeed prove to be consistently beneficial, and (b) if categories of instruction such as the Remedial/Corrective and Developmental Programs do reveal significant
differences in content and operation, and (c) to identify the nature of these differences.

2. The Meta-Analysis does appear to be a valuable method of extracting knowledge from accumulated individual studies and is a "complex and important methodological problem deserving of further attention" as Smith and Glass suggest. However, from the experience of this investigator it demands team efforts and should not be the project of a single investigator. The amount of reading and multiple analyses alone preclude such solo endeavor.

3. Additional research attention should be given to the reporting of content and operational patterns of college reading-study programs in order to identify effective program options for the various college populations. While no one program would appear to be singularly appropriate for the entire college population any more than any single "model" Chemistry, Mathematics, or English course would be, a recognizable content for such courses should be identifiable.

4. Further investigations into the characteristics of college readers in relation to the amount of time they spend in reading and study prior to and following reading rate instruction should prove interesting. Grob investigated one aspect of this issue with secondary students and found excessive amounts of time were spent by students with slow

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reading rates, a finding which was not unexpected. The relationship between this slow rate and attrition among the college population would appear to be a productive aspect for investigation, particularly noting the significant gains in reading rate identified by this study.

5. The whole issue of participation in a college reading-study course and its influence on withdrawal rates and/or subsequent completion of a college program was not conclusive. What effect increased student efficiency has on completion appears to demand further synthesis of existing studies.

Recommendations for College Reading-Study Programs

The unforeseen reporting problems make any model program conjectural until research can provide more complete reporting data. However, programs which reported greater gains, as well as the prevailing consensus of professional expertise, provide some guiding principles for program developers. The following recommendations for college reading-study programs were neither totally supported nor contradicted by the research, but are based upon the professional judgement of the investigator unless indicated otherwise.

Three of the six guidelines identified by the

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Fairbanks' study appear to have been supported by this investigation and by the broad review of programs and are included here:

1. College students participating in a college reading improvement program should be made aware of their specific difficulties in reading and the means by which they can correct them.

2. Involvement of the college students participating should be encouraged in all phases of the program: diagnosis, evaluation, and skills practice oriented to their own particular needs.

3. College reading improvement programs should be geared to meet the needs of individuals, either through the offering of options, or the use of individualized assignments, or both. Care should be taken to avoid the "depersonalization" of the program however.6

The foregoing principles appear to be valid for programs in all three areas categorized, for Remedial/Corrective, for Academic Support Programs as well as for Developmental Programs. They appear to be essential in Remedial/Corrective Programs, and some aspect of diagnosis or self-assessment should be a sine qua non for programs in both other categories. To conduct either a Remedial/Corrective or Academic Support Program without first determining, for example, if participants have adequate reading ability, is to make broad, unfounded assumptions about those participants, and possibly to provide "frustration level" instruction. The reader is referred to the discussion

6Marilyn Fairbanks, "On Analytical Study of the Relationship of Specified Features of Reported College Reading Improvement Programs to Program Effect on Academic Achievement," (Unpublished doctoral dissertation, West Virginia University, 1973), University Microfilms, Ann Arbor, Michigan, 73-12,938, p. 165.
of hypothesis 4 (pp. 231-2) for supportive data identified by this study.

In addition to the Fairbanks' guidelines, the following specific recommendations are made for programs in each category.

Remedial/Corrective Program Recommendations. The recommendations for Remedial/Corrective Programs are largely based on intensive examination of programs with greater reported effect sizes and are as follows:

1. Instruction in Word Study, in Study Skills, in Notetaking, in Critical Reading and in Content Reading should be included following specific diagnosis of students' difficulties in (at least) reading rate, comprehension and word attack skills. Limited attention to increasing students' Reading Rate may be included where indicated, but should not be a major emphasis of the program.

2. Required program attendance and use of diagnostic-prescriptive application techniques appears to enhance efficiency in Remedial/Corrective programs.

3. Adjunct counseling services as part of the diagnostic process may prove beneficial. The context should stress the relationship of study skills-motivation-counseling.

4. Programs should continue for several months preferably one semester. One hour class periods should be scheduled two or three times weekly. Some form of credit recognition should be granted.
5. While discussion methods appear to prove beneficial, considerable emphasis should be given to practical methods of transferring newly acquired reading-study skills to other content areas where students experience academic challenges. Critical Reading practice with actual college course materials should be included in both small group and individual sessions.

Programs in the Remedial/Corrective category did not produce large effect sizes comparing treatment to control groups, although several beneficial programs were identified. Programs in this category also appeared to have greater difficulty selecting control groups and in controlling for selection bias in their experimental design. Four studies provided both good experimental design and beneficial effects to the participants and are recommended for further study. Clark (1963), Ikenberry (1966), Phillips (1969), Ratekin (1971).

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7 Clifford H. Clark, "An Analysis of Reading Deficiencies and Corrective Treatment Among Freshmen Students From the Pacific Area Enrolled at the Church College of Hawaii," (Unpublished doctoral dissertation, Brigham Young University, 1963), University Microfilms, Ann Arbor, Michigan, 64-2998.

8 S.O. Ikenberry and others, "Effects of Reading-Study Skills Improvement and Reduced Credit Load on Achievement and Persistence of Failure Prone College Freshmen: A Pilot Study," U.S. Educational Resources Information Center, ERIC Document ED 022 654, 1966.

Academic Support Program Recommendations. Fewer studies were reported in the reading-study literature from this category. The following recommendations have been made based on the results of those programs which were reported:

1. Programs should provide opportunity for diagnosis and/or self-assessment prior to prescriptive instruction designed to remediate deficiencies which may have contributed to the academic difficulty.

2. Some opportunity for supportive counseling services appears to be beneficial.

3. Limited course loads combined with both academic skills instruction and supportive counseling intervention appear to be beneficial to students on academic probation.

4. Required participation does not appear to limit program effectiveness in this category, but this aspect of instruction should be investigated further.

Additional attention is needed to methods of retrieving additional guidance-counseling studies. Study-guidance-counseling reports which may have utilized other methods in their treatment were not identified in the extensive literature search conducted during this investigation.

Three investigators reporting programs in the Academic Support category which produced larger effect sizes than their

Microfilms, Ann Arbor, Michigan, 70-15,460.

controls appear to warrant additional study for program

Developmental Program Recommendations. The following
recommendations for programs in this category are made:

1. Developmental Programs should be voluntary rather
than required.

2. Instruction should be provided in Critical Reading,
Study Skills, Content Reading and Rate instruction with some
attention to Word Study in an overall developmental approach
designed for all interested students and not limited to
entering freshmen.

3. Diagnosis and remediation for students with deficient
rate and comprehension problems appear to produce the
greatest benefits. This is supported by additional research
that suggests students with slow reading rate spend dis-
proportionate amounts of time reading.

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11 R. Roth, H. Mauksch and K. Peiser, "The Non-
Achievement Syndrome, Group Therapy and Achievement Change,"
Personnel and Guidance Journal, Vol. 46, No. 4, (December
1967).

12 Stephen J. Anthony, "The Effects of a Study Skills
Course and a Self-Understanding Program on Low Achieving
College Students," (Unpublished doctoral dissertation,
University of Pittsburgh, 1971), University Microfilms, Ann
Arbor, Michigan, 71-26,151.

13 Robert A. Kaye, "The Effectiveness of a Guidance-
Counseling-Study Skills Treatment Program on the Academic
Achievement of Failing College Freshmen," (Unpublished
doctoral dissertation, University of Connecticut, 1971),
University Microfilms, Ann Arbor, Michigan, 71-18,419.

14 Grob., op. cit.
4. Diagnostic-participatory instructional methods appear to be most effective. This is supportive of Fairbank's recommendation regarding involvement of student participants in all phases of the program.

5. Programs meeting two to three times weekly but for less than a semester appeared to be more effective in Developmental Programs.

6. Individual and group practice with actual college reading materials should be provided with opportunities for students to receive professional assistance or guidance as needed.

A "model course" in Analytical and Critical Reading at the college level was adopted by the Northern California Community College Reading Association for consideration for college and university transfer credit. This course and the rationale supporting such courses appears to incorporate many of the recommendations for Developmental Programs at four-year colleges and universities cited above and has been included in the appendix. The argument presented for such courses by June Dempsey, Chairman, Division of Developmental Education, San Joaquin Delta College and former President of the Western College Reading Association, was that the ability to read actively, creatively, and critically was an open-ended combination of skills that must be polished and refined throughout a life-time. She suggests, furthermore, that these skills are

... as far removed from the simple skill of reading and understanding the average run of "adult"
reading material as calculus and higher mathematics are removed from simple arithmetic. Increased sophistication in the arts of reading is by no means automatic. The average student is as likely as not to remain a relatively fumbling, inefficient reader throughout his college career... without further training and direction.  

The course rationale, a description of objectives, and a brief suggestion of content have been included as presented, in Appendix F.

Programs in the Developmental category which were most effective and offer valuable guidelines to program developers were described by the following writers:  E. Wright (1960), R. Long (1962), Bryan (1971), Herman (1972), Brandt (1975), and McHargue (1975).

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15 June Dempsey, Memo to Communications Division regarding model course in Analytical and Critical Reading adopted by the Northern California Community College Reading Association, Part I Rationale. The entire memo and model course proposal has been included in the appendix, page 261.


20 James D. Brandt, "Internal vs. External Locus of Control and Performance in Controlled and Motivated Reading
The study by Bryan (1971) produced the largest effect sizes found in the investigation.

**Summary**

Research as to the value of college reading-study instruction and its effect on a number of variables has been conducted extensively throughout the United States and has been shown to be beneficial to students who participate. As Perry pointed out in his 1959 review of the Harvard Program, college students spend a considerable time in reading and study, and faculties are concerned that such hours be productive. The growth of college reading-study programs has been but one indication of this concern. With the acceptance of life-long learning concepts and developmental education, the place of a reading-study course on the college and university campus can be acknowledged and accepted without prejudice. This stance parallels the statement attributed to Goethe at age seventy-one which was used to introduce this investigation: "I have spent my lifetime learning to read."

---


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BIBLIOGRAPHY

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E. ENCYCLOPEDIAS AND DICTIONARIES


F. COMPUTER REFERENCE

APPENDIX A

DESCRIPTIVE TERMS USED IN BOTH
COMPUTER ASSISTED AND MANUAL
BIBLIOGRAPHY SEARCH
Appendix A. List of Descriptive Terms

The following terms were used to retrieve bibliographic entries from the ERIC Data base at the University of California, computer terminal, Davis. These entries were first verified by manual search of the literature.

College Reading Skills/Programs
College Reading Skills/Experimental Investigations
College Reading Rate/Comprehension
College Reading Centers
College Reading Improvement
College Readers
College Reading Materials/Programs
Critical Reading Skills/College-Higher Education
Reading/Study Skills/College-Higher Education
Reading Improvement/Higher Education
Reading Improvement/Academic Achievement
Reading Skills/Higher Education
Reading Research/College-Higher Education
Reading Programs/College-Higher Education
Reading Habits/College-Higher Education
Learning Centers/College-Higher Education-Adult
Learning Skills/College-Higher Education-Adult
Study Skills/College-Higher Education-Adult
APPENDIX B

FORM USED FOR INITIAL EVALUATION OF RESEARCH DESIGN
### TABLE 1

**SOURCES OF INVALIDITY FOR DESIGNS 1 THROUGH 6**

<table>
<thead>
<tr>
<th>Sources of Invalidity</th>
<th>Internal</th>
<th>External</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>History</td>
<td>Instrumentation</td>
</tr>
<tr>
<td></td>
<td>Testing</td>
<td>Regression</td>
</tr>
<tr>
<td>Pre-Experimental Design</td>
<td>X O</td>
<td>X O</td>
</tr>
<tr>
<td>1. One-Group Pretest-Posttest Design</td>
<td>X O</td>
<td>X O</td>
</tr>
<tr>
<td>2. Static-Group Comparison</td>
<td>X O</td>
<td>X O</td>
</tr>
<tr>
<td>True Experimental Design</td>
<td>X O</td>
<td>X O</td>
</tr>
<tr>
<td>4. Pretest-Posttest Control Group Design</td>
<td>X O</td>
<td>X O</td>
</tr>
<tr>
<td>5. Solomon Four-Group Design</td>
<td>X O</td>
<td>X O</td>
</tr>
<tr>
<td>6. Posttest-Only Control Group Design</td>
<td>X O</td>
<td>X O</td>
</tr>
<tr>
<td>Quasi-Experimental Design</td>
<td>X O</td>
<td>X O</td>
</tr>
<tr>
<td>7. Time Series</td>
<td>X O</td>
<td>X O</td>
</tr>
<tr>
<td>8. Equivalent Time Samples Design</td>
<td>X O</td>
<td>X O</td>
</tr>
<tr>
<td>9. Equivalent Materials Samples Design</td>
<td>X O</td>
<td>X O</td>
</tr>
<tr>
<td>10. NonEquivalent Control Group Design</td>
<td>X O</td>
<td>X O</td>
</tr>
<tr>
<td>11. Counterbalanced Design</td>
<td>X O</td>
<td>X O</td>
</tr>
<tr>
<td>12. Separate-Sample Pretest-Posttest Design</td>
<td>X O</td>
<td>X O</td>
</tr>
</tbody>
</table>

*Note: The table continues with additional designs and their respective sources of invalidity.*
APPENDIX C

FIRST FORM USED TO EVALUATE STUDIES INCLUDING ALL TWENTY-EIGHT PROGRAM CONTENT FACTORS
APPENDIX D

REVISED EVALUATION FORM INCLUDING SIX COMPOSITE PROGRAM CONTENT FACTORS
### CLASSIFICATION OF STUDIES

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>YEAR</th>
<th>EMPHASIS:</th>
<th>READING</th>
<th>PAPER</th>
<th>DISSERTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITLE</td>
<td></td>
<td></td>
<td>STUDY</td>
<td>R/S/COUNSELING</td>
<td></td>
</tr>
</tbody>
</table>

#### RESEARCH CONTROL

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>PRE POST</th>
<th>PRE POST</th>
<th>S con</th>
<th>TEST NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrument Oriented</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test Oriented</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### EXTENT FACTORS

<table>
<thead>
<tr>
<th>Affixes, roots</th>
<th>Etymology</th>
<th>Dictionary Study</th>
<th>Note cards, word lists</th>
<th>Synonyms</th>
<th>Word attack</th>
<th>Listening</th>
<th>Using the library</th>
<th>Scheduling time</th>
<th>Examination preparation</th>
<th>Reading charts and graphs</th>
<th>Sequencing ideas</th>
<th>Summarizing, notetaking</th>
<th>Content clues</th>
</tr>
</thead>
</table>

#### OPERATION FACTORS

<table>
<thead>
<tr>
<th>Affixes, roots</th>
<th>Etymology</th>
<th>Dictionary Study</th>
<th>Note cards, word lists</th>
<th>Synonyms</th>
<th>Word attack</th>
<th>Listening</th>
<th>Using the library</th>
<th>Scheduling time</th>
<th>Examination preparation</th>
<th>Reading charts and graphs</th>
<th>Sequencing ideas</th>
<th>Summarizing, notetaking</th>
<th>Content clues</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Duration of program</th>
<th>2 wks</th>
<th>3-4 wks</th>
<th>5-6 wks</th>
<th>7-8 wks</th>
<th>more than 8 wks</th>
</tr>
</thead>
<tbody>
<tr>
<td>College credit given</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program compulsory</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### RATE READ

<table>
<thead>
<tr>
<th>Reading in literature</th>
<th>Reading in mathematics</th>
<th>Reading in Sciences</th>
<th>Reading in Social Sciences</th>
<th>Flexibility in rate</th>
<th>Acceleration in rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 0-20</td>
<td>b. 21-30</td>
<td>c. 31-40</td>
<td>d. over 40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX E

INTER-RATER RELIABILITY CHECKS
Inter-rater Reliability Based on a Random Sample of Five Studies with Three Raters

<table>
<thead>
<tr>
<th>Study/year</th>
<th>Sanders</th>
<th>Barrick</th>
<th>Williams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swalm and Cox (1971)</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Anthony (1971)</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>H. Rose (1964)</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>E. Foxe (1966)</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Beasley (1964)</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

The reliability of ratings was measured using analysis of variance formula suggested by Winer. The formula used was:

$$r = \frac{\text{MS between studies} - \text{MS within studies}}{\text{MS between studies}}$$

$$r = \frac{\text{MS}_B - \text{MS}_W}{\text{MS}_B}$$  \quad r = .79 \quad \text{with three raters}$$

The criteria as specified on page 10 of the dissertation was (1) Adequate control with good design, (2) Moderate limitations, and (3) Serious limitations.

---

Inter-rater Reliability Based on a Random Sample of Eleven Studies with Two Raters

<table>
<thead>
<tr>
<th>Study/year</th>
<th>Sanders</th>
<th>Williams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerber (1966)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Risenmay (1965)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>E. Wright (1960)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>M. Hunter (1975)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Wilson (1968)</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>McHargue (1975)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>C. Clark (1963)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mattilla (1960)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>G. Wright (1973)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Santucci (1972)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>G. Phillips (1969)</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

The reliability of ratings was also measured by the formula suggested by Winer\(^2\) and cited on page 130. The formula was:

\[
r = \frac{MS_B - MS_W}{MS_B}
\]

\[r = .93\] with two raters

\(^2\)Ibid.
APPENDIX F

DEMPSEY MEMO/NCCCRA MODEL COURSE
TO: Members of the Communications Division

FROM: June Dempsey

RE: For your information and consideration. A model course in Analytical and Critical Reading at the college level has been adopted by the Northern California Community College Reading Association. This course description will be submitted to the colleges and universities for consideration for transfer credit.

RATIONALE

While courses in composition and expository writings are generally accepted as a useful and even necessary part of the college experience in most four-year schools, no such situation exists with regard to the sister skill of reading. On the contrary, two assumptions seem generally to be made: the first that reading is a far more elementary skill than writing, and the second that it is a closed or finite skill, or at least that after a certain point further development will be automatically induced by the mere pursuit of the activity—by continued and extended reading. Another frequent assumption is that anything the student needs to know about reading, has been, or should have been, acquired by the end of high school at the very latest. In so far as any improvement in this art or skill is possible or desirable, it is expected to occur automatically as a result of exposure to the more difficult and complex reading matter the student will have to deal with in his college career.

The ability to read actively, creatively, and critically is, however, an open-ended skill that can be polished and refined throughout a lifetime. It is as far removed from the simple skill of reading and understanding the average run of "adult" reading material as calculus and higher mathematics are removed from simple arithmetic. The average student is as likely as not to remain a relatively fumbling, inefficient reader throughout his college career or at least not nearly as efficient as he could become with some further training and direction. He may even deteriorate. And yet, university faculties and administrations, while they accept writing courses, (perhaps as a necessary evil), generally reject the idea of courses in reading, so-labelled, as undignified and demeaning in an academic atmosphere. We say so-labelled because, in fact, many of the skills of analytical, critical, judgmental reading and thinking are taught in courses in philosophy, psychology, and literary appreciation and as an accompaniment to expository writing courses. The argument presented here for establishing a formal reading course that may be taken for credit in the four-year colleges, is not that it will introduce anything novel or innovative into the curriculum, but that such a
course will give more opportunity to a greater number of students to study more intensively what is already accepted in principle as "worthy" and taught in the universities, but to too few students and on too narrow a scale.

COURSE TITLE Analytical and Critical Reading
2 class hours, 1 lab hour, 2 units credit

PREREQUISITES: Demonstration of reading proficiency at or at least near the college freshman level, OR consent of the instructor.

OBJECTIVES: I. Increased proficiency in the following areas:

A. The reading and understanding of expository prose.

B. The analytical and critical skills necessary for the comprehension, interpretation, and appreciation of college level reading material.

C. The ability to vary reading rate in accordance with the difficulty of the material and the purpose for which it is being read.*

II. An intensified awareness of reading as an art, i.e., a complex aesthetic and intellectual activity that goes far beyond the mere mechanical skills of acquiring information from the page of print.

While the current anti-intellectual trend towards "speed reading" is generally as much deplored by members of college reading staffs as it is by the average faculty member (in literature or physics departments, for example), it must be recognized that there are students whose reading is crippledly slow, and that these students must be helped to develop a reading style and reading comprehension techniques that will enable them to reach their natural rate of reading (which will vary from individual to individual). It goes without saying that the depth and difficulty of the material and the purpose for which it is being read must always be taken into consideration in working with the "speed" factor.
Dempsey Memo/NCCCRA Model Course

III. An understanding of the relationships between reading and the other communication media, and an appreciation of the unique contribution each makes to our awareness and understanding of reality.

IV. An increase in the student's awareness of his reading behavior, to be obtained by giving him opportunity, by means of an on-going series of analytic exercises, to make a systematic evaluation of his reading habits. The purpose of these exercises will be to uncover strengths as well as weaknesses and not merely to determine the areas in which there is need for improvement.

PROCEDURES

I. Diagnosis

Diagnosis will be an on-going process throughout the course and will consist of both standardized tests and informal exercises.

The standardized tests will give quantitative, more or less objective, measures of vocabulary, of level and speed of comprehension, of ability to make correct inferences, and of powers of critical thinking, while a continuing series of informal tests and reading exercises will attempt to present the student with more analytic-descriptive picture of what is actually going on when he is reading—with a view to giving him greater insight into his patterns of perceiving and thinking, his "cognitive style."

II. Techniques for Improving Reading

A. Vocabulary study. Words will be studied in relation to the context in which they are encountered. This in no way implies, however, that meaning is to be
derived exclusively, or even primarily from context.* There will be extensive work with the dictionary, with however, emphasis on the fact that all writers of stature tend to depart from rigid dictionary definitions and impart their own distinctive flavor and subtlety of meaning to many of the words they use.

B. Phrase Reading. Phrase reading will be emphasized as the most effective procedure for developing both depth of meaning and increased speed of comprehension. (Actually, the label phrase reading is a misnomer; a better term would be reading by units of meaning, since these units may sometimes consist of single words, and at other times of complete subject-verb sentences.) When a student is reading in these 'units of meaning' he is adjusting his reading rhythm to accord with the rhythm of the writer's thought and prose.

C. Sentence Meaning. Sentences will be studied and analyzed in detail to develop precision and exactness in understanding content. In addition students will be made aware of the flow of meaning that exists between sentences, often as a result of their mere juxtaposition. They must learn to recognize how each sentence relates to the preceding one or ones. Do they repeat, clarify, deny, modify or enlarge the original statement? Do they stay on the same thought or more forward in time or in the progression of ideas? (Unsophisticated readers are often totally unaware of this flow.)

D. Paragraph Study. Paragraph study will deal with the structure and organization of paragraphs (main idea, supporting details, cause and effect, etc.). However, the main emphasis will be on analysis of the content, and on the reader becoming aware of the writer's specific purpose in writing that

*The common procedure among students of free-for-all guessing of word-meanings as they read, without confirmation from other sources, has a more lasting effect than the immediate disaster of misinterpretation of the text. On a long-term basis it may be one of the factors most responsible for both stunted vocabulary growth and for the generalized feeling of confusion and bafflement as to what the writer is trying to put over that so many students suffer from.
particular paragraph. (Was his intention to
describe, to inform, to tell how, why, in what
manner, with what result, etc.?)

III. Reading Content  The reading techniques will be taught
in the context of longer selections
which may consist of essays or other
expository writing, literary fiction
or poetry. Their content will be
organized around one or more central
topics or fields of knowledge so that
the student will be learning as well
as "learning to learn."

These topics should be sufficiently
broad to embrace more than one
academic discipline and of sufficient
intrinsic value and appeal to the
student to repay the time he will
spend studying and working with
them. A few examples of possible
topics which might lend themselves
to fulfilling these requirements
are listed below:

Man's Concern with Death
Crime and Punishment
Love and Sexuality
Man and the Supernatural
Parent and Child Relationships
Man's Concept of Time

IV. Evaluation  Two dimensions of the student's achieve­
ment will be taken into account. He will be required
to:

A. Give concrete evidence of having acquired new
information and new insights from the content of
the readings, and of having incorporated them into
his existing body of knowledge.

B. Show measured improvement in the techniques of
reading...as demonstrated by comparison of pre
and post testing at the beginning and end of the
course.

C. A subjective written or oral, account of what the
course experience has meant to him and the ways
in which he sees himself as having gained from it.
VITA

Name: Victoria Hunter Sanders
Residence: 2121 S. Jack Tone Road
Stockton, California 95205

Summary of Education:

Stockton College (1949) A.A. Degree (Liberal Arts/Law)
College of Pacific (1957) B.A. Degree (Education/Psychology)
Stanford University (1962) Certificate (T-V and Film Production, Summer Institute)
University of Pacific (1969) M.A. Degree (Education, Curriculum and Instruction)
University of Pacific (1979) Ed.D. Degree (Education, Curriculum and Instruction)

Dissertation title: "A Meta-Analysis: The Relationship of Program Content and Operation Factors to Measured Effectiveness of College Reading-Study Programs."

Credentials held: General Elementary, Life and Standard Secondary, Life.

Professional Experience:

May 1976 to present: Director of the Learning Center, University of Pacific; completed doctoral studies.

1975 - May 1976: Graduate Fellowship, University of Pacific.

1969 - 1975: Vocational Communications Skills Specialist, Franklin High School, Stockton Unified Schools; Developed and directed a laboratory reading-study program for vocational students; an exemplary demonstration site for California State Department of Vocational Education.


1961 - 1962: Teacher (6th Grade), Oro Madre School District; Taught all subjects in a rural mountain community.

1960 - 1962: T-V teacher, KVIE Educational TV (Channel 6); Released part-time to organize and teach several series, including CALIFORNIA STORY AND CALIFORNIA CLOSE-UPS (4-6th Grade), FOLK FESTIVAL, et al.; also did public relations appearances and worked with in-service groups.


1953 - 1957: Teacher (1st and 2nd Grades), Harrison Elementary, Stockton Unified Schools.

1950 - 1953: Teacher (1st and 2nd Grades), San Rafael City Schools.

1949 - 1950: Teacher (1st and 2nd Grades), Harmony Grove School, San Joaquin County Schools.

Professional Writing and Publications.


FROM SAILS TO RAILS with Hamma, Hurd and Ewing, Lane Magazine and Book Co., Menlo Park, Ca., 1969.


Special projects: Co-authored with Robert DeBord, Vocational Education Coordinator (SUSD), Elizabeth Hamma, Team teacher (SUSD), et al, eight demonstration projects (six received
funding) for the State Department of Vocational Education, 1969-1975.

Co-authored with Elizabeth Hamma the Reading portion of the Marshall Junior High project, an AB 938 project funded 1969.

Honors Received.

Appointed member of Governor's History Commission, 1963
Elected to Delta Kappa Gamma, Honorary Sorority for Women in Education
Scholarship, Stanford University, T-V and Video Production, Summer workshop 1962
Work recognized: A National Study to Identify Outstanding Programs in Vocational Education for Handicapped and Disadvantaged Students, ERIC Document ED 058 415, November 1971, pp. 15-16.

Membership in Professional Organizations.

Elected to Phi Delta Kappa and Phi Kappa Phi, 1977
International Reading Association
San Joaquin County Reading Association
California Reading Association
Western College Reading Association
Stockton Teacher's and California State Teacher's Association
National Education Association

Community Organizations.

First Baptist Church, member of the diaconate 1979-1980
San Joaquin County Medical Society Auxiliary

Personal Data:

Birthplace and date: Hollywood, California December 6, 1929

Parents: William Logan Hunter and Alma MacLean Hunter

Husband: Lawrence P. Sanders, M.D.
1717 N. California St.
Stockton, California 95204

Four children - all adults