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REMEDIAL READING: EVALUATION OF A READING-AND-STUDY COURSE  
WITH IMPLICATIONS FOR A COLLEGE READING CENTER

by

Antoine T. Powell

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF SCIENCE

in

Psychology

UTAH STATE UNIVERSITY  
Logan, Utah

1968

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Antoine T. Powell

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## ABSTRACT

Remedial Reading: Evaluation of a Reading-and-Study Course  
With Implications for a College Reading Center

by

Antoine T. Powell, Master of Science

Utah State University, 1968

Major Professor: Dr. David R. Stone  
Department: Psychology

The main purpose of the study was to evaluate the effectiveness of the method of teaching a "How to Study" class in helping students more adequately meet their reading needs.

Research was conducted to test the reading gains made by students in the program with respect to ability and group size. The results indicate that group size had the greatest effect as to changes in reading behavior.

Instruction was based on diagnosing student needs. It was shown that a significant number of students who decreased in rate of reading, increased in comprehension. The same diagnostic principle was observed for those who were judged able to increase rate, since a significant number in this category also increased in comprehension. It was concluded that the training was effective in helping students to adjust their rate of reading in order to facilitate an increase in comprehension. There was a wide range of individual differences in the actual amount of comprehension increase. The average increase of 14.5 percent was not significant. However, of the 163 students in the program 82 made a 10 percent

increase or better.

The principle problem of students making no progress was motivation. While 13.8 percent rated the course as one of the best, 30.2 percent rated the course as above average, and 34.5 percent rated the course average, 14.5 percent rated the course below average, and 6.2 percent were very critical of the course.

(54 pages)



## INTRODUCTION

There is much literature indicating that the ability to read well is necessary for academic success in school. Every year seems to increase the reading demands made upon students as well as adults.

Reading in the past has been considered to be an elementary school subject. It was assumed that college students had acquired the requisite reading skills to meet the successive academic demands made upon them. To propose a course in reading for college students seemed to many persons to be ridiculous. However, changes in the demands of college education have made efficient reading habits imperative. The varied curricula of colleges today demand a larger and more expert repertory of reading skills than was formerly required.

An increasingly larger number of high school graduates are now entering college. This is due, in part, to an awakening public consciousness regarding the value of higher education. It is no longer felt that higher education should be available only to a selective group. As the school population in the United States has become less selective the number of poor readers has increased. They attract attention in colleges where greater demands on reading techniques are made and where standards are relatively high.

A statement made by Damon Reach (1955), Head of the Department of Education at Howard College, seems to be typical for most colleges who have students registering that show a wide range in ability. He stated that:

Many people are astonished when they learn that we often find college students with reading ability of seventh or eighth graders. A great many, otherwise able students, cannot do college work because of deficiencies in the basic skills of reading, vocabulary, and good study habits. As a result, many essentially capable college students fail or do poor work simply because they never developed or used their full capacities to learn efficiently from the printed page. (Reach, 1955, p.36)

The importance of deficiency in reading becomes still more evident when one considers that in college approximately 80 to 90 per cent of all study activities require silent reading as a means of gaining knowledge. Success in many courses depends in large measure upon the students ability to comprehend the required readings in a reasonable length of time (Strang, 1940).

#### Problem

There are freshman students coming to Utah State University with reading ability ranging from the grade school levels to college senior level. At the present time, students who are classified as "remedial" at Utah State University are required to register for the "How to Study" class, which is a combination reading-and-study class. There is a lack of systematic knowledge about the effectiveness of our present method of teaching this course to help students more adequately meet their reading needs.

### Hypotheses

1. Reading gain will be greatest in the high ability sections, and least in the low ability sections.
2. Small sections will make greater gains in reading ability than large sections.
3. When IQ is held constant, each section will make a significant gain in reading scores regardless of group size or initial reading ability.
4. There will be a high correlation between IQ as measured by the CTMM and the total comprehension score on the SRA Diagnostic Reading Test.

### Definition of Terms

CTMM shall refer to the California Test of Mental Maturity

SRA Diagnostic Reading Test shall refer to the Diagnostic Reading Test, Survey Section, distributed by the Science Research Associates.

Gain shall refer to the difference between the pre Diagnostic Reading Test, Form A and the post Diagnostic Reading Test, Form B.

## REVIEW OF LITERATURE

Many colleges and universities are becoming aware of the problem of the remedial reading course and are attempting to institute developmental reading programs to help students overcome their reading difficulties and thus more adequately meet the increased reading demands. These attempts have met with varying degrees of success.

Reading programs vary in content and procedures. Nevertheless, the better programs strive to achieve these common objectives: (1) to make the individual more critical and observant; (2) to strengthen his vocabulary and increase his potential for clear understanding and communication; (3) to create diversified reading interest within the individual by broadening his vicarious experiences; and (4) to increase permanently his rate of reading with a satisfactory level of comprehension (Lawshe and Chandler, 1955).

### Criterion For Evaluating Programs

#### Grade Point as a Criteria

Authorities have stressed different criteria in evaluating the effectiveness of reading programs at the college level. For example, some authorities stress grade point. Robinson (1950) in his evaluation of college remedial reading courses stated that:

A review of nearly one hundred studies, for example, uncovers

less than a dozen references to the effect of reading programs upon scholastic improvement. Of these only one study using control groups reports apparently significant gains in terms of academic grades for reading classes. Other investigators either report no significant improvement in academic standing as the result of remedial instruction, or without definitive findings take hopeful and confident stands that reading instruction can improve academic work. (Robinson, 1950, p. 83)

Mouly (1952) reported that when only that portion of the experimental group which had successfully completed the remedial reading program was compared with the control group, significant differences in favor of the former were found. Thus he concluded that a remedial reading program can result in an improvement in academic grades for those students who take the course seriously.

McDonald (1957) also found that students who completed the remedial reading program offered at Cornell University surpassed students in the control group in the three phases of academic performance that he investigated; cumulative grade-point averages, grade-point averages above 70, and number of dropouts.

In a report by Charles (1951) on the combined reading-and-study improvement course at the University of Nebraska, the laboratory group results were favorable but not statistically significant at either the .01 or .05 levels when grade-point averages were compared with the control group.

Hinton (1961) reported academic achievement of reading students who desired instruction in reading and a control group of honor students, assuming that their motivation toward seeking a degree was comparable. Grade-point averages covering the period were computed for both groups. The reading students showed a

significant increase in grade-point averages when the current semester was compared with the previous semester, while the honor students showed a decrease in grade-point averages when the current semester was compared with the following and previous semesters.

Dalton, Gliesman, Guthrie, and Rees (1966) reported academic achievement for three groups; a reading group, an orientation group, and a control group. The reading group received practice with a Shadowscope (an individual reading pacer), individual conferences with the instructor, group discussions on reading problems and techniques, and special help in abstracting and summarizing, etc. The orientation group received instruction on taking notes, taking tests, writing papers, planning study time, and planning a college program. It did not include any work on reading skills. The control group received no reading instruction and were enrolled in no special class. The reading group had a significantly higher mean GPA than either the orientation group or the control group at the end of the semester. At the end of the following semester the mean GPA of the reading group was still significantly higher than either the orientation or the control group.

Of the relationship of reading to scholarship Strang (1940) stated in her book on Problems in the Improvement of Reading in High School and College that reading ability has a positive relationship to scholastic attainment but that this relationship is not invariably a close relationship. Sayles (1961) in an article on

recent research in reading reported that some investigators (Hill, Jackson, Havens, and Robertson and Harrison) have found moderate to high correlations between reading ability and grade-point averages, while others (McQueen, Preston, and Murphy and Davis) have found low or negative correlations between the same variables.

#### Increased Reading Skill as a Criterion

Some investigators, however, would contend that increased reading skill alone is a sufficient goal in establishing the effectiveness of a remedial reading course. Reach and Dotson (1955) reported that 170 students who took the Howard College Reading Laboratory Course increased their rate approximately 147 per cent with a satisfactory improvement in comprehension. They reported that many students who began the semester reading at a slightly subcollege level of less than 300 words a minute, more than doubled their rate by the end of the semester and that students have annually improved in comprehension resulting in increased general efficiency as students.

Heftel (1961) described a reading program comparing gains in reading speed with academic aptitude and initial rate. Students concentrated primarily on increasing speed. Generally, students tripled their rate of reading narrative material, more than doubled their rate of reading study-type material, and at the same time increased their comprehension. The correlation between an index of academic ability and gain in reading rate was significant at the

.01 level. The correlation between gain in study type reading speed and academic ability was significant at the .05 level. Results of dividing the group into fast, middle, and slow readers indicated that the students who show the greatest academic aptitude are also initially the fastest readers and will probably profit the most from reading training.

McGinnis (1951) reported corrective work in reading at the college level. She found that students not only made a statistically significant gain in reading ability, but also made higher grade point averages.

#### Multiple Criteria

Some investigators of remedial reading programs have preferred multiple criteria. For instance, Barbe (1962) chose fifty college students ranging from college freshmen to senior law students to serve as subjects in an experiment to determine the improvement which could be made, and the possible effect that such improvement would have on the subject's grades. He found that: (1) Significant gains were made in remedial reading work at the college level. The experimental group mean rate increased sixty-four per cent compared to an increase in the control group of two per cent, which should emphasize the value of such a program. (2) The gains which were made were still significant six months after the end of the remedial work, indicating relative permanency. And (3) the grade-point average of the experimental group showed an improvement significant at the



.05 level, while the control group gain was not found to be significant

Smith and Wood (1955) attempted to determine the changes in reading performance, permanence of gains, and concomitant changes in academic status of seventy-four freshmen students who volunteered or were referred for a corrective reading course at the University of Michigan. They found that: (1) Significant gains in performance (though not necessarily in skill) result for those aspects of reading which are emphasized in training. (2) Performance gains are maintained and, possibly, increased after a lapse of time (sixty weeks) with no formal training when continued practice is encouraged. And (3) significant superiority in academic status is demonstrated by experimental subjects over both control and representative freshmen subjects when study and examination skills are emphasized during the training period.

Traxler (1949) in an article on research in reading stated that in the studies where permanence of improvement has been studied, the gains made during remedial teaching have been found to be relatively permanent.

Ray (1965) investigating permanency of gains, found that two college reading program groups had each gained significantly at the end of the program. One group showed no loss when retested three months later. The second group was found to have maintained significant gains in rate and vocabulary when retested six months later. This study indicated consistent retention of skills in four areas, i.e., vocabulary, comprehension, total reading score,

and rate of reading.

### Method of Instruction

Hundreds of techniques of teaching reading improvement classes of all educational levels have been tested and compared. Spache, Standlee, and Neville (1960) evaluated three methods of teaching reading at the University of Florida. All students in the program were subjected to an individualized approach to remedial reading. Three remedial reading procedures were employed: (1) a class centered around a reading workbook, (2) a class centered around an audio-visual instrument, and (3) individualized self-improvement. The three instructional procedures were found to be equally effective in terms of reading, vocabulary, and reading comprehension.

Mayhew and Weaver (1960) compared gains in reading skills of university students taught under four different methods of instruction. Experimental Condition I used only the Harvard Reading Materials, written above the tenth grade level. Experimental Condition II used only the SRA Better Reading Book and the SRA Reading Progress folder. This material was considered to be of a lower difficulty level than the Harvard materials. Experimental Condition III used both the SRA and Harvard reading materials, the Harvard Reading Films, and the tachistoscope. Experimental Condition IV used the SRA and Harvard reading materials, alternating them each period. On the basis of the results obtained in this study, it is not necessary to own expensive equipment such as a tachistoscope or reading films in order to improve reading skills. The gain under Conditions

I, II, and III were almost identical, suggesting that almost any selection of good reading materials which is reasonably homogenous in reading difficulty will be as effective as expensive equipment. However, the mechanical equipment seemed to have a positive motivating function in the reading program.

Wedeen (1954) compared the results obtained from two groups of students. One group used a mechanical device (Reading Rate Controller) to increase reading ability while the other group used a non-mechanical method (the Speeded Book Reading Technique). She found that both groups produced genuine gains in reading rate, comprehension, and general reading ability.

Wooster (1954) tested the value of the reading-rate controller in a course of effective study. Two groups of six unmatched students each received 345 minutes and 315 minutes, respectively, on the reading-rate controller. A third group of forty-eight students served as a control. Wooster did not find any significant differences in rate or comprehension among the three groups.

Glock (1949) selected 135 college freshmen who needed remedial reading. Three methods were employed. Two of these methods utilized controlled reading practice techniques, while the third method relied upon mechanically uncontrolled reading from the printed page. Condition I utilized Harvard Films which flashed the text in phrases across and down the screen. Condition II consisted of a film developed by Glock whereby two full lines of text were projected simultaneously. In Condition III the subjects read the same material in pamphlet form. The results of the study showed

improvement in rate and rate of comprehension with all three instructional methods. Some teachers obtained better results from one method than from another.

Sutherland (1946) gave tachistoscope word and phrase training, films and reading exercises, and no training in reading to three groups of freshmen at the State University of Iowa. The gains which were made by the films and reading exercises group exceeded those of the tachistoscope group. However, the group who did not receive any reading instruction made gains which were statistically significant.

Other investigators who have compared the effectiveness of the machine-centered programs with the book-centered programs that have reported inconclusive findings as reported by Karlin (1958) in a review of research on "Machines and Reading" include Westover, Tompson, and Henry and Laur.

#### Voluntary vs Required, Credit vs Non-Credit

There are many forms of remedial reading classes. Practice varies with respect to giving credit for remedial work in reading. Some schools require attendance but give no credit; others require attendance and give credit; still others place the course on a purely voluntary basis. Those persons who advocate giving credit maintain that students will be more careful about absences and will take the course more seriously if it is on a par with their other courses. Others claim that a student will take the

course voluntary if it is of recognized value to him and to require attendance is an acknowledgement of its weakness (Strang, 1940).

Some researchers have found that it makes no difference whether the class is offered on a credit or non-credit, voluntary or involuntary basis. The student who desires to improve his reading ability improves while the student who does not have this motivation to improve does not or drops out of the program (Roth, 1961).

Feinberg, Long, and Rosenheck (1962) studied the effects of a mandatory study course for entering freshmen. On the basis of the statistical analysis of the data relating to test scores and college grades it was concluded that the study course did not produce any statistically significant changes. They felt that this finding could be explained in terms of negative attitudes and resistance, both to the program and to the testing later, because of the mandatory nature of the course.

Wood (1962) polled sixty-three representative college reading clinics in 1955 to determine the number of dropouts in college non-credit, non-tuition programs. He found that an average of twenty-two percent of the students who had enrolled in reading courses did not complete it. The lowest rates, however, were reported for those programs offering credit, but special fees had little effect on dropouts.

Except for Woods study, little has been done to investigate

the difference between students who are referred to a reading and study skills program -- by teachers, counselors, or advisors -- and students who enter such a program of their own volition. In response to this condition Darby (1966) investigated the relationship between referred and self-initiated student groups in reading ability, study attitudes and habits, longevity of stay in the reading laboratory, time spent in the reading laboratory, appeal of self help approach to improved reading and study skill, and the degree to which students' reading and study skill plans are fulfilled. It was found that the self-initiated group worked significantly more hours per week and total hours in the Reading and Study Skills Laboratory at the University of Maryland than the referred group and appeared to be more highly motivated than the referred group. However, no difference was found between the two groups in terms of reading achievement as measured by the SRA Placement and the Nelson-Denny Tests (total score only). Darby suggested that the ability and desire to recognize one's difficulties in reading and study skills and trying to overcome these difficulties are not related to reading achievement, and thus suggested further research.

## PROCEDURES

### Population

All freshmen students are required to present the results of the American College Testing Program Examination as part of their application for admission to the University. Test scores may be used as one of the criteria for admission, and they are also used to assist deans, heads of departments, and advisors in placing students in appropriate class sections and in helping them in similar academic decisions.

Graduates of Utah high schools are admitted to the University if they are entering Utah State University directly from high school. Students with grade point averages between 2.0 and 2.2 are referred to the dean of the college of their choice for consideration. If the dean accepts such students, they are placed on warned status or probation. Students not acceptable to a college are admitted to General Registration, but such students are also placed on warned status or probation.

Graduates of non-Utah high schools are accepted in good standing if they present a grade point average of 2.2 or above and are entering Utah State University directly from high school. Students who present a grade point average below 2.2 are referred to the Admissions Committee and are accepted or rejected on the

basis of approved test scores and other information.

General Registration is the division into which students are admitted who do not qualify for enrollment into one of the academic colleges. These include Utah residents who have graduated from high school with less than a 2.2 grade point and are not accepted in an academic college, non-Utah residents and transfer students from other institutions of higher learning with less than a 2.2, and former Utah State University students with less than a 2.0 grade point seeking readmission. Except for Utah residents seeking admission for the first time, admission into General Registration is by permission of the Admissions Committee. First quarter freshmen students admitted into the division of General Registration are required to enroll for the non-credit "How to Study" course. Non-credit remedial courses of English and mathematics are required of students whose American College Test scores show deficiencies in those subjects. Students from other colleges than General Registration may be required by the dean of their specific college to register for the "How to Study" course.

#### Subjects

Students in this study consisted of all first quarter freshmen who registered for the "How to Study" course at Utah State University fall quarter 1967 and who: (a) took the CTMM, (b) took the SRA Diagnostic Reading pre and post tests, and (c) completed



the course.

Of the two hundred and ten students who registered for the course only one hundred and sixty-three met the requirements for the study. Five students failed to take the CTMM, five failed to take the pre SRA Diagnostic Reading Test, and thirty students failed to take the post SRA Diagnostic Reading Test. Seven students transferred or dropped the class.

### Design

During the first week of class the SRA Diagnostic Reading Test, Survey Section, Form A, and the California Short-Form Test of Mental Maturity were administered to all students in the program.

Based on the SRA Diagnostic Reading "total comprehension" score, students were assigned to one of three sections each hour that the class was offered (8:30 A.M., 10:30 A.M., and 1:30 P.M.). Students in section 1 for each hour were made up of approximately the lowest one-third, section 2 approximately the middle one-third, and section 3 approximately the highest one-third.

The percentile range and the IQ range for each section is presented in Table 1.

Students characteristically prefer morning classes. This group was no exception, and when registration was allowed on the basis of free time choice, the afternoon groups had a smaller registration. This means that time of day, in this study, was

Table 1. Student Assignment -- Based on "total comprehension" score of SRA Diagnostic Reading Test.

Section	Hour	Percentile* Range	Mean IQ	IQ** Range
1	8:30	.01-.07	91.2	62-119
2	8:30	.08-.26	107.0	89-128
3	8:30	.28-.90	121.4	101-135
1	10:30	.01-.08	94.5	68-108
2	10:30	.09-.24	105.3	95-122
3	10:30	.26-.97	117.5	102-134
1	1:30	.02-.13	99.1	83-114
2	1:30	.14-.31	115.4	93-129
3	1:30	.33-.70	118.6	108-130

\* Diagnostic Reading National Norms for the Survey Section: College Freshmen Level (N=16,604); Tabulated October, 1953.

\*\* As measured by the California Test of Mental Maturity.

regarded as less important than free choice. The performance of the three groups of varied sizes will be reported in the findings. Table 2. gives the numbers in each group.

On the first day of instruction, a "level finder" placement test was administered by each instructor to his section. Based on the results of this test, each student started his reading exercises at his own level of competence.

The Powerreading Program published by the Programs For Achievement in Reading Inc. was used as the method of instruction for all

Table 2. Student Assignment -- Number of students compared on IQ and Reading Score.

Group Size	IQ	Reading Score		
		Low	Medium	High
Large	115 and Above	2	5	24
	100 to 114	8	17	4
	99 and Below	18	5	
Middle	115 and Above		3	13
	100 to 114	4	16	4
	99 and Below	11	5	
Small	115 and Above		4	7
	100 to 114	4	2	2
	99 and Below	4	1	

sections. This program consists of four books. The first three provide for improvement in power, speed and effectiveness with words. Book four is used to record personal reading scores and help the instructor as well as the student determine progress. All of the reading selections are grouped in levels of ten articles each. The material which is easiest to read is on level "A" which corresponds to third grade reading; the most difficult is on level "L" which corresponds to grade fourteen (college sophomore level). Each student starts at his own level of competence and progresses from level to level as he becomes proficient with preceding levels. The student, then, progresses at his own rate according to his ability.

Upon completion of the course of instruction, the SRA Diagnostic Reading Test, Form B, was administered. Students were also asked to fill out a student evaluation form.

#### Instrumentation

The Diagnostic Reading Test, Survey Section, yields four independent measures: Rate, Story Comprehension, Paragraph Comprehension, and Vocabulary. The Rate score is a measure of reading rate in words per minute based on the time required to read a light essay passage. The student is made aware that his rate will be measured, at least by the fact that he is instructed to record the number of the line he is reading on when the examiner says "mark". Story Comprehension consists of twenty multiple-choice questions covering the same material from which

the rate score is derived. Paragraph Comprehension directly contrasts with Story Comprehension because the twenty multiple-choice questions demand inferences, such as identifying the main idea of the passage. The instructions for this test encourage the student to read the four short passages rapidly but state that he is allowed to return to a passage in order to answer a question. Vocabulary consists of 60 items, each starting with a defining clause which provides the student with cues for choosing one of five words. The median reliabilities reported (Triggs, 1956) for the subtests are: Rate, .80; Story Comprehension, .74; Paragraph Comprehension, .83; Vocabulary, .89; and Total Comprehension (items 1-100), .91.

The measure of reading improvement for this study is the reading gain score, which is defined as the difference between the pre and post test scores on the subtests of the Diagnostic Reading Test, Survey Section.

The California Short-Form Test of Mental Maturity is a one-period adaptation of the California Test of Mental Maturity. The Short-Form provides information about the functional capacities that are basic to learning, problem-solving, and responding to new situations. The test has comparable forms for each of six levels, beginning with "Level 0" through "Level 5" which is the "College and Adult" level. Level 5 was used in this study.

Seven administrative test units, measuring aspects of mental ability, are grouped into two sections, Language and Non-Language.

These differentiate in general between responses to stimuli that are that are primarily verbal in nature and responses to stimuli that are essentially non-verbal or pictorial. A separate mental age and intelligence quotient are obtained for each of these sections.

#### Statistical Analysis

Analysis of variance, covariance, and correlation were used as the statistical tools in this study.

## FINDINGS

### Skill Changes

In order to test the first hypothesis, which states that reading gain will be greatest in the high ability sections and least in the low ability sections, analysis of variance was computed. The results are shown in Table 3.

Table 3. Differences in pre and post test means of low, medium and high ability groups.

Test	Ability Group			F	Sig.
	Low N=51	Medium N=58	High N=54		
Subtest	Mean Diff.	Mean Diff.	Mean Diff.		
SRA Diagnostic Reading Test					
1. Reading Rate	1.65	-1.43	-.48	2.23	-
2. Story Comprehension	2.88	1.77	1.32	1.84	-
3. Vocabulary	.06	.16	.24	.19	-
4. Para. Comprehension	2.69	.95	1.07	1.58	-
5. Total Comprehension	2.53	1.47	.52	.67	-

.05,  $F > 3.00$

In view of the findings shown in Table 3. it can be seen that the highest percentage of improvement was shown by the "low" group on story comprehension, with a gain score of 2.88. This represents a 29.7% increase over the average pre test score.

The low ability group made greater gains in all the subtests except vocabulary, than did either the high ability group or the medium group. The gains, however, were not significant at the .05 level of significance. The first hypothesis was rejected.

The second hypothesis, which states that small sections will make greater gains in reading ability than large sections, is not supported by the results as shown in Table 4.

Table 4. Differences in pre and post test means of small, middle, and large groups.

Test	Group Size			F	Sig.
	Small N=24	Middle N=56	Large N=83		
Subtest	Mean Diff.	Mean Diff.	Mean Diff.		
1. Reading Rate	-15.33	8.18	-1.38	24.56	.01
2. Story Comprehension	1.59	1.96	2.08	.27	-
3. Vocabulary	-1.41	.07	.66	.97	-
4. Para. Comprehension	.42	1.48	1.85	1.23	-
5. Total Comprehension	-.91	1.52	2.16	1.78	-

.01,  $F \geq 4.61$

The means for the small sections showed a negative change in three of the five scores reported while the mean changes in the middle sized group were all positive, and the mean changes in the large group were positive except in the case of reading rate which was negative. The differences in the scores of story comprehension,



vocabulary, paragraph comprehension and total comprehension for the three group sizes did not vary more than four points, and no significance was found.

However significance well above the .01 level was found in the case of reading rate in both the small and middle sized groups. In order to take a closer look at the change in reading rate the means and standard deviations were computed for each ability group with respect to group size. The results are reported in Table 5.

Table 5. Differences in pre and post test reading rate means with respect to group size and ability.

Group Size	Ability Group								
	Low			Medium			High		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Large	28	-2.32	13.58	27	-4.96	11.51	28	3.00	22.51
Middle	15	14.73	11.57	24	6.87	7.93	17	4.24	9.71
Small	8	-9.00	9.89	7	-16.29	17.27	9	-20.22	9.91

As can be seen in Table 5. the greatest change was made by the small group with the "high" ability. All three ability groups in the small sections decreased in reading rate, the greatest decrease being made by the high ability group followed by the medium and low

ability groups respectively.

The greatest gain in reading rate was made by the middle sized group with the lowest ability followed by the medium and high ability sections respectively.

The range of change in reading rate or words per minute was then from a decrease of approximately 87 words per minute in the case of the small sections to a gain of 61 words per minute in the case of the middle sized group.

In order to test the third hypothesis, which states that when IQ is held constant each section will make a significant gain in reading scores regardless of group size or initial reading ability, analysis of covariance was computed. The results are shown in Table 6.

The results as shown in Table 6. indicate that significance was found well beyond the .01 level of significance with respect to reading rate when compared on group size. Significance was also found at the .05 level on the interaction between ability and group size.

The results of covariance support the results found in the analysis of variance reported above. Thus the greatest change in reading rate occurred with respect to group size. The smallest groups decreasing in reading rate and the middle groups increasing.

The covariate -- IQ -- was found to be significant at the .05 level of significance in the case of the vocabulary score

only (.05,  $F \geq 3.84$ ).

Table 6. Analysis of covariance with respect to comprehension and group size.

	Subtest	df	MS	F	Sig.
Main Effect Related To Total Comprehension	1. Reading Rate	2	147.39	.75	-
	2. Story Comprehension		10.18	.93	-
	3. Vocabulary		49.09	1.41	-
	4. Para. Comprehension		28.51	1.37	-
	5. Total Comprehension		94.61	1.95	-
Main Effect Related To Group Size	1. Reading Rate	2	4472.05	22.82	.01
	2. Story Comprehension		2.43	.22	-
	3. Vocabulary		50.07	1.44	-
	4. Para. Comprehension		23.17	1.11	-
	5. Total Comprehension		11.05	2.28	-
Interaction Between Ability And Group Size	1. Reading Rate	4	486.69	2.48	.05
	2. Story Comprehension		7.55	.69	-
	3. Vocabulary		17.69	.51	-
	4. Para. Comprehension		42.12	2.02	-
	5. Total Comprehension		27.15	.56	-

.01,  $F \geq 4.61$

.05,  $F \geq 2.37$

When looking at the data of change in reading rate for these small sections, and comparing it with the story comprehension score on the material upon which reading rate was based it was found that sixteen of the twenty students who decreased their reading rate made an increase in their comprehension score.

A sign test was computed for the small sections. The story comprehension score and rate of reading score were paired for each

student. Where the signs were the same a (+) plus was assigned, in other words if both reading rate and comprehension were negative or both were positive. If the reading rate score and the comprehension score differed in sign, one being a minus and one being a plus, a (-) minus was assigned. Of the twenty-four students, two had differences which were zero and thus were excluded from the sample.

Appropriate signs were assigned to the pairs in the manner mentioned above. Eighteen of the twenty-two students received plus signs. This indicates an inverse relationship which is significant at the .01 level of significance.

To test the fourth hypothesis, which states that there will be a high correlation between IQ as measured by the CTMM and the "total comprehension" score on the SRA Diagnostic Reading Test, correlation was computed. The results are shown in Table 7.

Table 7. Correlation of IQ as measured by the CTMM and "total comprehension" on the SRA Diagnostic Reading Test.

Total Comprehension	Language IQ	Non-Language IQ	Total IQ
Pre Test	.80	.61	.80
Post Test	.79	.58	.78

As can be seen in Table 7. correlation between IQ and reading score reflects a substantial relationship in the case of Language

IQ and Total IQ, and a moderate relationship in the case of Non-Language IQ.

### Student Evaluation

The student evaluation form was made up of two parts. In Part I students were asked to rate the course from "one of the best I have had in this regard" to "one of the poorest I have had in this regard." A Likert type scale was used as the means of evaluating six areas: course content, assignments, examinations and grading procedures, teaching methods, textbook, and instructor. In Part II students were asked to comment on what changes they would suggest and to give, in their estimate, strong and weak points for each of the six areas mentioned above.

The results of the student evaluation form, Part I are shown in Table 8.

As indicated in Table 8. the percentage of students who rated the six areas to be above average (combining percentages under 1 and 2) were: (1) content of course, 40%; (2) assignments, 33%; (3) examinations and grading procedures, 37%; (4) teaching methods, 61%; (5) textbook, 51%; and (6) instructor, 42%. As can be seen in Table 8. the percentage of students who rated the six areas to be below average (combining percentages under 4 and 5) were: (1) content of course, 23%; (2) assignments, 30%; (3) examinations and grading procedures, 21%; (4) teaching methods, 15%; (5) textbook, 19%; and (6) instructor, 16%.

The results of Part II will be presented separately for each of the areas mentioned above.

#### Content of Course

Those who rated the class as average or above felt that the content

Table 8. Part I -- Student evaluation form.<sup>a</sup>

Items	Rating <sup>b</sup>				
	1	2	3	4	5
1. Give your evaluation of the content of this course considering such points as suitability of subject matter to your needs and agreement between course objectives and material actually taught.	9%	31%	37%	19%	4%
2. Give your evaluation of the course assignments. Comment on amount and type of assignments, and their usefulness or values.	10%	23%	44%	21%	9%
3. Give your evaluation of the examinations and grading procedures. Comment on type of tests, length, fairness, frequency, and relationship to the course objectives. (4% Blank)	10%	27%	38%	12%	9%
4. Give your evaluation of the teaching methods including your estimate of instructor's interest and knowledge of subject, attitude towards students, clarity and interest level of presentation and ability to stimulate students. (1% Blank)	22%	39%	23%	10%	5%
5. Give your evaluation of the textbook, considering such points as readability, interest level, appropriateness to course, and specific strengths and weaknesses.	21%	30%	30%	12%	7%

was fair to very good. They felt that it provided good ideas on how to improve in speed and comprehension, and that the course was worthwhile. Their main suggestion for improvement was in reference to the number of times that the class was taught per week. Many commented that they needed more than one hour a week in class. Some suggested that the class be offered three times a week, and others suggested that the "study" part of the class be deleted and the time be given

Table 8. Continued.

6. What is your overall evaluation of the instructor. (7% Blank) <sup>c</sup>	11%	31%	35%	13%	3%
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<sup>a</sup> Based on 171 forms.

<sup>b</sup> Rating for items 1-5.

1	2	3	4	
This is one of the best I have had in this regard.	Above average in this regard	About average in this regard.	Below average in this regard.	Is one of the poorest I have had in this regard.

<sup>c</sup> Rating for item 6.

1	2	3	4	
One of the best I have had.	In the upper 25%.	About average	In the lower 25%.	One of the poorest I have had.

to the reading materials.

Some felt that the content of the course did not exemplify college reading material or that it was good but taught in an elementary way, others stated that the content of the course was too easy.

Those who rated the class to be below average made comments about the content that ranged from good to poor. Some felt that the reading selections were boring and uninteresting while others believed it to be so easy that it was an "insult to (their) mentality." Others stated that the content was good but that the teaching methods were lacking. Some also commented that there was not enough time in class.

Forty-six students made no comments about the content of the course.

### Assignments

Those who rated the assignments as average or above commented that the assignments given were good or "okey." Some felt that they

were assigned to the students working ability as well as his speed. Others commented that they were fine or suitable because they were not too, "time consuming", "hard", or "many."

The main suggestion for improvement from this group was that "more assignments should have been given" and the ones given, should have been checked on. Some felt that the assignments that were made were not carried out by most of the students. The number and type of assignments given varied from instructor to instructor. Some students felt that they recieved too many at one time and that they were too lengthy for a class offering no credit.

Those students who rated the assignments as below average felt that many were a waste of time, they got very little from them, and that the assignments were of no value to the student. Others felt that there were too many given and that it was impossible to do a weeks work in one day. One student commented that the assignments were not too demanding and that this was good because he was receiving no credit for the course.

Some students, however, stated that not enough were given to stimulate new thinking and keep interest.

Forty-two students made no comment on assignments.

#### Examinations and Grading

Examinations will be considered first, then grading.

Students who rated the examinations to be average or above felt that they were good and well planned. In this evaluation many students included the administration of the CTMM and the



SRA Diagnostic Reading Test. Therefore those comments, such as the ones mentioned above could have been made in reference to the group tests. This seemed to be evident because many of the students stated in their comments that no exams or tests were given.

The main suggestion from the group on examinations was that more class tests be given.

Those who made comments about the grading who rated it average or above ranged in their feelings about the pass-fail condition from okey to very fair. Many students felt that a letter grade of ABCDF should be given rather than the P-F. Some felt that if the letter grade were given, "it might provide some incentive to do better and work harder in class."

Those who rated grading below average felt that a letter grade should be given and that students should receive credit for the class.

Forty-two students made no comment on examinations and grading.

#### Teaching Methods

Students who rated the teaching methods as average or above commented that the teaching methods and the instructor's knowledge were excellent or very good. They generally felt that the instructors were well prepared and interesting. Many commented that the instructors "knew enough, but didn't have enough time to teach it." Some commented that a clock was needed in the room in order for them to record time accurately.

Students who rated the teaching methods as below average felt

that the instructor was not concerned or that he didn't care, or that he "gave the impression he was teaching a bunch of kids." Some felt that the methods used were more "suited to the seventh grade."

Thirty-seven students made no comment about the teaching methods.

#### Textbook

Those who rated the textbook as average or above generally felt that it was excellent but that it cost too much. Many commented that it was very interesting, well organized, and that it helped a great deal. Some felt, however, that they did not get enough use out of it.

Those who rated the textbook to be below average mainly commented that it "cost too much." Some commented that it contained good ideas but not enough time was spent in the book.

Twenty-eight students made no comment about the textbook.

#### Instructor

Students who rated the instructor as average or above felt that the instructor was "very interesting", "very good", "patient", "pleasant", and "very capable." They generally felt that the instructors were interested in helping students. Students suggested that some instructors did not make enough assignments, that they needed more class time, and that a clock was needed in the room. Some felt that the instructor could have moved faster.

Those who rated the instructor as below average felt that

either the instructor was not interested in the class or that he miss used the time -- "talks too much, not enough practice in reading." Some felt that the instructors of particular sections were unorganized and rather boring. Others commented that the instructor was good, fair, or average.

Twenty-eight students made no comment about the instructor.

## DISCUSSION

When looking at the data of change in reading rate for the small sections, and comparing it with the comprehension score on the material upon which reading rate was based it was found, as indicated in the "Findings" chapter, that a decrease in reading rate was related to an increase in comprehension. This change was significant at the .01 level. This would indicate that some students were reading this material only superficially. In order to find out if this was the general case or specific only to the small sections a sign test was run on the entire sample. It was then found that of the sixty-four students who decreased in rate, forty-nine increased in comprehension. This relationship was significant at the .01 level of significance.

If this pattern is general for this kind of student, it would follow that the student who increased his rate of reading from pre to post test would decrease in comprehension. However, this was not found to be the case. All of the students who increased in rate of reading for the entire sample were then considered. It was found that of the sixty-nine students who increased their rate of reading fifty-three also increased their comprehension. This relationship was also a significant relationship at the .01 level of significance. This relationship would suggest that some

students were reading at a rate which was below the rate at which they were able to read and still maintain good comprehension. While the instructors seemed to emphasize reading for comprehension, both students and instructors were very aware of rate of reading with respect to good comprehension.

As indicated in the results of the student evaluation, many students felt that the course was a worthwhile course and helped in many ways, however these students made statements like "we just got started," or "there wasn't enough time to cover all the material." They seemed to feel in general that one hour a week was not enough time to develop the skills necessary to improve in areas such as vocabulary and speed reading. This same feeling was also expressed by the instructors. They felt that either a laboratory hour be included in which students could practice the skills they were learning and receive "special" instruction and/or that the class be offered three times a week.

Some students seemed to feel that the course was just not beneficial to them. They seemed to resent the program. Some felt that the material was "good for junior high school students" and others felt that it was "not exemplary of a college course."

One student went so far as to write the editor of the campus newspaper in order to voice his objection to the class. His letter follows.

Editor:

I am writing this for two reasons. First I would like to congratulate Lynn Packer on his article "B.Y.U. Plays The Mother Role"; and second to object to the College of

General Registrations study class. In my opinion this class is a poor example of university level classes. I came into U.S.U. on a warned status but the first quarter, summer quarter, I was here the class was not available so I went ahead and took other classes which I passed with grades good enough to get off warning. My A.C.T. scores were high enough that it wasn't required of me to take remedial Math or remedial English but I still must complete one quarter of remedial study for which we, the ones in the class, are expected to buy fourteen dollars worth of books for a two hour a week class from which no credit is obtained. Students of this same opinion unite to change this regulation.

(Student Life, October 16, 1967)

Some students feelings toward the class were also expressed in their reluctance to complete the pre and post testing. Forty students did not take one or the other tests. Some of the students were given as many as seven opportunities to take the pre tests, and were even contacted individually before the testing sessions, however, ten students still failed to make the necessary effort.

As has been indicated in the review of literature motivation seems to play a critical role in whether or not a student makes substantial gains. Some students in this study suggested ways in which this class could have been different which would have provided for, in their view, better motivation. They indicated that the course: (1) should have been offered for credit; (2) that an ABCDF grading system be used instead of the P-F system; (3) that more assignments be given and checked on; (4) that a less expensive textbook be used; (5) that only those students who needed the course be required to take it or that it be set up on a voluntary basis; and (6) that the class be offered more than once a week.

In discussions with staff, regarding the views expressed by

some of the students, as above, the following suggestions have been developed: (1) Students should be screened. A definite criterion be set up for accepting students into a program such as this. Students below a specified score should be required to register for the class. Students who have developed sufficient skill in reading should not be required to take the course. (2) Students lacked the necessary stimulus to prepare for the class in the absence of grading. Thus an ABCDF system is preferable to the P-F system. The instructors felt that this would also provide the necessary motivation to complete the assignments that were made. (3) One meeting per week was insufficient to emphasize any single area of reading. Instructors felt that it was impossible, during the time allotted, to concentrate on vocabulary, dictionary skills, outlining and note-taking as well as make progress in reading skills. Some of the instructors felt that the class should be taught daily while others felt that it should be taught three times a week and a laboratory hour be provided. (4) They felt that the books used in this program were excellent, however, they would agree that the students needed more time in which to work in them, or that simpler materials be found or developed. (5) The general feeling of the staff about the size of the class was that it be limited to a maximum of ten students. It was felt that large classes eliminate any opportunity for individual attention. Classes larger than ten do not allow the instructor time to check on work assignments and individual records, or give individual help. (6) It seemed that

there were many absences throughout the quarter in all sections. Instructors felt that absences should affect the grade given, but that this be explained to the student early in the program.

The results that college reading and study courses have on GPA is not clear. There are no standard courses, no set methods, and no adequate controls in this area of research.

There are also inconclusive findings in the areas of: method of instruction; whether or not a college reading and study course should be voluntary or required; and whether or not the course should be offered for credit.

#### Limitations of the Study

Students were not randomly assigned to the various ability sections due to the inflexibility of scheduling. The students were assigned to the appropriate ability section for the hour in which they had registered for the class.

The size of the sections were due to free choice registration -- the 8:30 sections being the largest, and the 1:30 sections being the smallest. Due then to free choice registration it was impossible to test the effect of the time of day.

A non-activity control group was not employed because comparisons were made among experimental groups of varied sizes and capabilities.



## SUMMARY AND CONCLUSIONS

### Summary

The purpose of this study was to evaluate the effectiveness of the present method of teaching the "How to Study" class in helping students more adequately meet their reading needs.

All first quarter freshmen who registered for the "How to Study" course at Utah State University fall quarter 1967 and who: (a) took the CTMM, (b) took the SRA Diagnostic Reading pre and post tests, and (c) completed the course, were included in the study. There were one hundred and sixty-three students who met the requirements. The reading gains made were tested with respect to ability and group size.

The following results were found in this study.

1. The low ability group made greater pre-post gains in all the subtests of the SRA Diagnostic Reading Test except vocabulary, than did the medium or high ability group, however these gains were not significant.

2. Small sections made a significant decrease in reading rate which was accompanied by gains in comprehension on the material upon which rate was measured.

3. Middle sized sections made a significant increase in reading rate, and also made gains in comprehension on the material upon which rate was measured.

4. The diagnosing of student needs was effective in helping students adjust their rate of reading to facilitate an increase in comprehension.

5. IQ as measured by the CTMM correlates highly with the pre and post SRA Diagnostic Reading Test.

6. Between seventy and eighty-four per cent of the students rated the content of the course, assignments, examinations and grading procedures, teaching methods, textbook, and the instructor to be average or above.

#### Conclusions

On the basis of the results of this study, the following conclusions have been reached.

1. The first hypothesis which states that reading gain will be greatest in the high ability sections and least in the low ability sections must be rejected.

2. The second hypothesis, which states that small sections will make greater gains in reading ability than large sections had to be rejected because the small groups did not make gains in reading rate, but actually decreased. A significant number of those who decreased in rate improved in comprehension.

3. The third hypothesis was rejected because all of the students did not make significant gains.

4. The fourth hypothesis, which states that there will be a

high correlation between IQ and "total comprehension" score was supported.

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