

R E P O R T R E S U M E S

ED 011 490

RE 000 107

AN EXPERIMENT ON THE EFFECT OF MOTIVATIONAL APPEAL VS. TECHNIQUES UPON READING RATE IMPROVEMENT IN A GROUP OF COLLEGE STUDENTS.

BY- MAXWELL, MARTHA J. MUELLER, ARTHUR C. MARYLAND UNIV., COLLEGE PARK

REPORT NUMBER RR-65-04

PUB DATE AFR 65

EDRS PRICE MF-\$0.09 HC-\$1.60 40P.

DESCRIPTORS- *READING RESEARCH, *COLLEGE STUDENTS, *READING COMPREHENSION, *READING SPEED, READING ABILITY, *STUDENT MOTIVATION, READING TESTS, READING IMPROVEMENT, STUDENT ATTITUDES, QUESTIONNAIRES, COLLEGE PARK, ROBINSON HALL READING TESTS

A STUDY OF THE READING HABITS AND ABILITIES OF 132 PSYCHOLOGY STUDENTS AT THE UNIVERSITY OF MARYLAND WAS CONDUCTED TO DETERMINE (1) IF READING SPEED COULD BE INCREASED WITHOUT CHANGE IN COMPREHENSION AND (2) WHETHER INFORMATION ABOUT SOME OF THE BASIC TECHNIQUES OF READING STRESSED IN TYPICAL READING COURSES COULD ELICIT CHANGES IN STANDARDIZED READING TEST PERFORMANCE. THE SUBJECTS WERE DIVIDED INTO CONTROL, MOTIVATIONAL, AND FACTUAL GROUPS. ALL SUBJECTS WERE PRETESTED WITH THE ROBINSON-HALL CANADIAN HISTORY TEST AND A QUESTIONNAIRE ABOUT READING HABITS AND ATTITUDES. THE MOTIVATIONAL GROUP READ A HANDOUT ABOUT THE BENEFITS OF RAPID READING BEFORE RETURNING TO TAKE THE POST-TEST BATTERY. THE FACTUAL GROUP RECEIVED SUGGESTIONS FOR IMPROVING READING SPEED. THE CONTROL GROUP RECEIVED NO INSTRUCTION OR SUGGESTIONS. SEVEN DAYS LATER THE ROBINSON-HALL ART AND RUSSIAN HISTORY TESTS AND A POST-QUESTIONNAIRE WERE ADMINISTERED. A STATISTICAL ANALYSIS WAS MADE OF PRE- AND POST-TEST SCORES, QUESTIONNAIRE RESPONSES, AND SCHOLASTIC ABILITY FOR EACH GROUP. THE INVESTIGATORS FOUND THAT READING SPEED COULD BE INCREASED WITHOUT SIGNIFICANT CHANGES IN COMPREHENSION AND THAT THE DISTRIBUTION OF HANDOUTS COULD HELP INCREASE STUDENTS' READING RATES. TABLES AND A BIBLIOGRAPHY ARE GIVEN. COPIES OF THE HANDOUTS AND QUESTIONNAIRES USED ARE INCLUDED. (LS)

ED011490

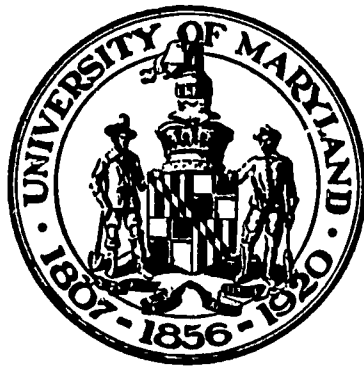
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE
PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS
STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION
POSITION OR POLICY.

COUNSELING CENTER

Office of Executive Dean for Student Life

UNIVERSITY OF MARYLAND

College Park, Maryland



AN EXPERIMENT ON THE EFFECT OF MOTIVATIONAL APPEAL
VS. TECHNIQUES UPON READING RATE IMPROVEMENT IN A
GROUP OF COLLEGE STUDENTS.

Martha J. Maxwell
Arthur C. Mueller

Reading and Study Skills Laboratory
Research Report #65-04

April, 1965

RE 000 107

**AN EXPERIMENT ON THE EFFECT OF MOTIVATIONAL APPEAL
VS. TECHNIQUES UPON READING RATE IMPROVEMENT IN A
GROUP OF COLLEGE STUDENTS.**

**Martha J. Maxwell
Arthur C. Mueller**

**Reading and Study Skills Laboratory
Research Report #65-04**

April, 1965

AN EXPERIMENT ON THE EFFECT OF MOTIVATIONAL APPEAL VS TECHNIQUES
UPON READING RATE IMPROVEMENT IN A GROUP OF COLLEGE STUDENTS¹

Martha J. Maxwell and Arthur C. Mueller

University of Maryland

The area of the literature pertaining to speed versus comprehension is replete with apparently contradictory statements such as Judd (1916) (as cited by Rankin (1962)) that "high rate and good quality are commonly related and that low rate and poor quality are commonly related." And King (1916) that "the slow reader was the more efficient reader." The majority of these seemingly conflicting statements can be resolved if one will consider the various factors and their combined effects which influence the correlation between speed and comprehension. For purposes of discussion these factors have been classified into three broad areas: (1) method of measurement, (2) situational factors, and (3) individual factors.

Method of Measurement

Whether speed and comprehension indicate positive or negative correlations can be influenced by the method of measurement.

Letson (1958) (as cited by Rankin (1962)) obtained correlations ranging from .46 to .77 between speed and comprehension when comprehension was measured as the number of correct responses; whereas, when comprehension was measured as the percentage of the number correct over the number attempted, the correlation was reduced to -.10.

¹Statistical analyses were partially supported by the University of Maryland Computer Center.

In the former, comprehension was measured as a function of the rate of reading; therefore, the speed, comprehension correlation was highly positive. In the latter, comprehension was measured as the number correct over the number tried. This was independent of speed and consequently the correlation of speed versus comprehension was low and negative.

Stroud (1942) and Stroud and Henderson (1943) stated that the high positive correlations obtained from standard reading tests between speed and comprehension were actually artifacts of the method of measurement. Since the individual worked against time, the number right depended partially upon speed. It was found that when speed was not a factor in the measurement of comprehension that the correlation dropped from between .40 and .50 to .17.

Eurich (1930) found low positive correlations between speed and comprehension when comprehension was defined as the amount recalled. This finding was in agreement with the conclusions of Tinker (1932) who stated that retention and recall were not identical to comprehension ability and therefore one could expect a generally low correlation.

Situational Factors

The situational factors are those components which are intrinsic to the test situation.

King (1916; 1917) found in studies that the slow reader had a higher comprehension score than the rapid reader. But their speed and comprehension scores were obtained from different tests. The speed scores

were measured on easy narrative prose whereas the comprehension , scores were obtained from difficult reading material.

Tinker (1932) and Anderson and Tinker (1936) found that large positive correlations were obtained when speed and comprehension were measured on the same or equivalent material. They also suggested that the negative correlations obtained when the speed and comprehension scores were measured on different tests, may have been a result of different combinations of the many factors involved in reading.

Thus it appears that the correlation between speed and comprehension also can be influenced by the nature of the material being compared; i.e., whether the speed test and the comprehension test used the same type of test material, or whether different material was used for each test. For example, were both speed and comprehension measured on easy English prose or was speed measured on the English prose and was comprehension measured on the physical sciences.

Since the majority of standardized tests measured comprehension as a function of speed no allowance has been made for the slow but accurate reader.

Pressey and Pressey (1920) using the Monroe Standardized Silent Reading Test obtained a correlation of .72. They accounted for this high correlation by the fact that the time limit on the test was short and therefore only a rapid reader could obtain high comprehension scores.

Traxler (1932) using untimed tests to measure comprehension, found

very low correlations which he interpreted to mean that when time is not a factor, both the rapid reader as well as the slow reader perform equally well on comprehension items. His results are clouded by the fact that he used different tests to measure speed and comprehension.

Preston and Botel (1951) used the Iowa Silent Reading Test Form Am, under timed conditions and portions of Form Bm under untimed conditions. The correlation obtained for the timed test was .48; whereas, the correlation for the untimed test was .20. From these results it was concluded that speed and comprehension were relatively independent of each other and therefore it was not meaningful to measure comprehension in a timed situation which allowed the scores to be biased through speed.

Tinker (1940) in response to Robinson's (1940) article in which speed, within the interval ranging from easy to medium difficulty level, was considered as the span of recognition, stated that speed of reading was rate of comprehension and that any attempt to separate them would produce a false conception of reading.

Gates (1921) has best summed up the results with the statement that "standardized reading tests do not differentiate between rate and comprehension for the correlations of rate tests with the composite of comprehension are about the same as with the composite of rate, and the correlation of comprehension tests are about the same with rate as with comprehension."

Tinker (1939) varied the difficulty level on the same material to study its effect upon the speed, comprehension correlation. The results indi-

cated that the correlation decreased as the difficulty level increased. These results are also supported by Blommer and Lindquist (1944), Tinker (1945), and Kershner (1964).

The current methods of teaching effective textbook reading skills (SQ3R, SQ4R, etc.) all suggest that the individual preview the material forming questions to be answered during the actual reading. The questions give direction or purpose to the reading.

King (1917) administered the same test both before and after the reading material. He obtained a negative correlation between speed and comprehension which may have been partially due to the fact that the subjects were reading with a purpose, to find answers to the pre-test questions, which tended to suppress their rate.

Traxler (1932) noted that when his subjects were instructed that they were to be tested on the material read, that the comprehension scores for both the slow and rapid readers were approximately equal. This may partially account for the low correlation between speed and comprehension.

Kershner (1964) found that when the subjects anticipated being tested on comprehension, that there was a tendency for the reading time to increase. This increase in time when combined with equal comprehension scores would also produce a low correlation.

Seashore, Stockford, and Swartz (1937) found that continuity of context within tests influenced the individuals position within the group. Carlson (1951) obtained similar results.

From this one may conclude that the correlations obtained from the comparison of tests of continuous context with those composed of several different selections are not meaningful.

Pressey and Pressey (1921) found that both speed and comprehension were affected by the location of the comprehension questions. Some tests were composed of several short articles with questions following each article. This type of test construction allowed the subject to refer back to the article for answers. Other tests consisted of one long reading selection with questions placed either in a separate booklet or at the end of the reading selection so that the subject could not refer back to the article for answers.

Carlson (1951) found that scores obtained from a test or tests which were comprised of different reading materials influenced their speed and comprehension scores.

Tinker (1939) found that the type of response as well as special background tend to lower the correlation.

Individual Factors

Lafitte (1963) stated that the human factors affecting reading speed were: (1) intelligence, (2) reaction time, (3) perception, and (4) motivational and physical factors.

Carlson (1949) found that at high levels of intelligence, the rapid reader obtains better comprehension scores; whereas, the slow reader obtains better comprehension scores at medium and low levels of intelligence. This difference becomes more pronounced as the difficulty

level increases and as the purpose for reading becomes more exact.

Holmes and Singer (as cited by Spache (1963) stated that approximately 94% of the variability in reading speed could be attributed to the individual's vocabulary, word attack skills and desire for speed.

Blommer and Lindquist (1944) and Barbe (1965) state that among other things that speed of the individual was influenced by reading skill and habits, mental, emotional, and physical states.

Groff (1962) found that comprehension was influenced by the individual's attitude toward the content of the material, and that this was more noticeable when the subject was required to reason or to infer rather than repeat verbatim. He also obtained attitudinal differences between sexes as a function of content.

Maxwell (1964) found that college students showed a significant increase in reading rate as a result of being told to read faster. Furthermore, she found that an experimental group given a sheet describing techniques for improving reading speed with instruction to practice showed significant rate gains after one week compared with a control group.

This study partially replicates Maxwell's investigation and in addition attempts to control on the "placebo" effect by experimentally manipulating motivation.

Specifically, this study was conducted to determine whether information about some of the basic principles of reading stressed in typical reading courses, could, of themselves, (i.e., without benefit of a

formal course) elicit changes in standardized reading test performance, (i.e., significant increase in rate without decreasing comprehension.) Further, it was designed to test whether material designed to increase motivation for increasing reading rate without specifying techniques would affect reading speed and comprehension.

Sample:

180 University of Maryland students enrolled in Psychology 1 were identified and tested. The size of the sample was reduced to 132 subjects (59 males and 73 females) by eliminating those students whose ^{scores} comprehension/were lower than 50% on the assumption that any subject whose scores were that low was not trying. The subjects were completely naive concerning the purposes of the study.

Apparatus:

The apparatus consisted of three Robinson-Hall Reading Tests: the Canadian History Test, the Russian History Test and the Art Test. Also included were two sets of handout material: one consisted of selected basic reading principles titled Suggestions for Improving Reading Speed by Martha Maxwell and the other of motivational material titled How Will Better Reading Benefit You? taken from the book How to Become a Better Reader by Paul Witty (1953).

Procedure:

Each subject was assigned to one of three groups depending on his schedule of classes. The groups were designated: 1) control, N=48; 2) motivational, N=40; and 3) factual, N=44.

Groups 2 and 3, the experimental groups, were named on the basis of the type of handout distributed to their respective groups.

The three groups (control, motivational, and factual) completed the pre-questionnaire* and the Canadian History Test (pre-test) at the first experimental session and returned seven days later to take both the Art and the Russian History Tests and to fill out the post questionnaire.* Both the motivational group and the factual group were given literature at the first experimental session with the instructions to read the material before returning to take the post-test battery. The control group received no material to read between pre- and post testing sessions.

The motivational group differed from the factual group in two respects: (1) the handout that the factual group received gave suggestions for improving speed, whereas, the motivational group's handout merely described the benefits of rapid reading; (2) in the factual group, the test administrator discussed the use of these various methods of improving speed briefly, whereas, the motivational group was simply asked to read a handout.

Results :

Table 1 indicates the pre and post-test mean speed scores plus the mean difference scores for all three groups.

* Copies of the pre- and post questionnaires are included in the appendix.

Table 1
The mean pre- and post-test scores for speed

	Control Group (N=48)	Motivational Group (N=40)	Factual Group (N=44)
Pre-test Mean W.P.M.	258.5	249.9	233.5
Range	242	278	186
*S.D.	55.65	62.51	69.41
Post-test Mean W.P.M.	287.2	287.4	322.6
Range	355	418	351
*S.D.	69.87	87.38	81.06
Mean Difference score W.P.M.	29	28	90

*S.D. = Standard Deviation

The mean difference scores for the control group (29) and for the motivational group (28) were not significantly different ($P > .05$), but when the factual group's mean difference score was compared with either of the other two groups the difference was significant ($P < .05$).

The factual group showed the greatest mean speed score increase between pre- and post-tests (234 W.P.M. to 323 W.P.M. respectively.) The control group also showed a mean speed score increase (258.5 to 278.2.)

All three groups showed increases in mean speed scores between pre- and post- test scores. The increases in speed were tested for significance using "t" tests. The results indicated that both the factual group (233.5 to 322.6 W.P.M.) and the control group (258.5 to 278.2) showed significantly gains ($P < .05$) between pre- and post-

tests. The motivational group was not significantly different even though its mean gain was greater than the control group (249.9 to 278.4 W.P.M.) An F-test for homogeneity of variance was conducted to see if this would explain why the motivational group scores on pre- and post-tests were not significantly different. The results indicated that the variability for both the control group (1.57) and factual group (1.36) between pre- and post-tests was not significant ($P > .05$), but for the motivational group the variance was not homogeneous ($F=1.957$). Comparison of the variance scores indicates that the factual group had the smallest variance and that the motivational group had the greatest.

Table 2
Lindquist type VI Anova summary table (speed)

Source	D.F.	Sum of Squares	Mean Squares	F-Ratios
Group	2	8144.000	4072.000	0.4839
Pre-Post	1	156950.750	156950.750	130.2182
Pre-Post X Group	2	53663.250	26831.625	22.2615

The F ratio column in table 2 indicates that the combined pre- and post-test mean speed scores within each group (factual, control, and motivational) did not differ significantly ($P > .05$) between groups.

The mean pre-test speed score for all three groups (247.5) was significantly different ($P < .05$) than the mean post-test speed score for all three groups (296.3).

The F-ratio column also indicates that the mean difference score

between the pre- and post-test speed scores of the three groups were not equal ($P > .05$).

Table 3
The mean pre- and post-test comprehension scores

	(N=48) Control Group	(N=40) Motivational Group	(N=44) Factual Group
Pre-test Mean	70.0	71.8	70.2
Post-test Mean	74.7	71.5	68.1
Mean Difference Score	5	1	2

Table 3 shows the fluctuations in the mean pre- and post-comprehension scores for all three groups. The control group increased its mean comprehension from a pre-test score of 70 to a post-test score of 75. Both the motivational group and the factual group decreased in comprehension between the pre- and post-test. However, none of the changes in comprehension for the three groups were statistically significant ($P > .05$).

Scholastic Ability:

Table 4
Table of ACT distributions

Group	<u>ACT Percentiles</u>				Total
	Q ₁ Low	Q ₂	Q ₃	Q ₄ High	
Motivational	fe (3.63)	(5.61)	(9.25)	(17.50)	36
	fo 2	6	9	19	
Control	fe (2.80)	(5.46)	(8.99)	(17.02)	35
	fo 2	6	6	21	
Factual	fe (3.83)	(5.93)	(9.76)	(18.43)	38
	fo 7	5	13	13	
Total	11	17	28	53	109

Table 4 shows the data for chi-square analysis of the ACT scores. The chi-square test was performed on the ACT scores to see if the ability level of the subjects in the four groups were equivalent. The results indicated that the samples were not significantly different ($X^2 = P > .05$) in ability. However, the total distribution of ability scores in all of the samples were heavily weighed with above average students. (75% of the total group scored in the two upper quartiles.) This is most likely the result of dropping students from the study whose comprehension scores were below 50% thus eliminating low ability subjects.

Relation of Practice to Speed Gains

Table 5 compares the amount of self-reported practice with increases in speed scores for the factual group. T-tests were run to determine whether the speed gains were statistically significant.

Groups I ("tried it once or twice") and II ("tried it three or four times") both showed ^{that} significant change occurred within the group that "tried three or four times". Neither the control group nor group III ("tried it every day") produced significant changes between the pre- and post-tests despite the large mean difference in group III. The limited size of Group III (N=5) however, restricted the possibility of getting significant results.

Table 5
Mean pre- and post-speed scores for groups reporting varying amounts of practice

Group	Frequency of Practice	N	WPM Pre-Test	WPM Post-Test	Mean Difference
I (exp.)	"tried it once or twice"	15	224.2	333.2	42.3
II (exp.)	"tried it three or four times"	18	229.2	305.7	76.6
III (exp.)	"tried it every day"	5	266.2	379.6	113.4
IV (Control)		48	252.2	287.1	29.5

Attitudinal and Informational Differences Between Groups of Fast and Slow Readers

The pre-questionnaire data was analyzed by comparing the responses of upper and lower seven percent of the distribution of Canadian History speed scores and comparing their responses to the questionnaires.

These results indicated that:

- 1) Twenty-five percent of the fast group stated they read at least a book a week, plus newspapers, magazines, etc.; whereas, only 7% of the slow group were so inclined.
- 2) Thirty-nine percent of the slow group thought that adequate comprehension would take place if all main ideas and details are remembered; whereas, only 25% of the fast group thought this to be the case.
- 3) When trying to read rapidly 41% of the fast group felt that they could read for ideas, skipping unimportant words; whereas, only 25% of the slow group checked the same response.
- 4) Eighty-two percent of the fast group found it generally easy to get the main ideas from reading quickly; whereas, only 57% of the slow group felt it was easy.
- 5) Sixty percent of the slow group stated that they read slowly but retained the needed facts well; whereas, only 39% of the fast group claimed that they were slow, accurate readers.
- 6) Forty-one percent of the fast group were satisfied with present reading skills; whereas, only 30% of the slow group were satisfied.
- 7) Twenty-seven percent of the slow group found it very difficult to recall details from their reading; whereas, only 11% of the fast group had a similar problem.

Discussion

The review of the literature has shown that the relationship between

speed and comprehension is influenced by many variables including the method by which is measured. If comprehension is measured as a function of time, speed, (Tinker, 1932) the correlation is positive but if comprehension is measured independent of speed (Preston and Botel, 1951) the correlation is negative. Which method of measurement is most meaningful?

In the author's opinion the question has been answered in favor of measuring comprehension as a function of speed.

The control group was instructed to read faster, which they did. This finding is supported by Maxwell (1964) who found that instructing students to read faster on standardized tests resulted in significantly faster reading rates.

The motivational group received a handout stating the benefits of rapid reading but did not give any suggestions on how to improve rate. Several interpretations are possible: 1) since increased variability indicates that some students increased their speed while others did not change, one might suspect that the motivational material affected some of the group strongly but not others; or 2) some students may have resisted the experiment and performed poorly on the post-tests.

The factual group showed significant gains in speed with no difference in comprehension.

The results of the chi-square analysis of the ACT scores indicated that the ability levels of the different groups were not signif-

icantly different ($P < .05$).

Table 4 shows that at least 75 percent of the subjects fell within the third and fourth quartile. From this one may infer that the sample was skewed in the direction of high intelligence. The reason for the bias may have been due to the criteria used to select subjects. It was assumed that if a subject did not obtain a comprehension score of 51% or better on the Canadian History test that he was not trying and should be dropped. Inadvertently, this may have biased the sample.

Carlson (1949) stated that at high levels of intelligence, the rapid reader obtains the best comprehension scores. Kammann (1963) supported this view and also found that ACT scores correlated highly with comprehension scores.

Since the rapid reader is nearest to his maximum comprehension potential, it would have taken greater effort to produce significant increases in comprehension. This may account for significant increases in speed without corresponding significant increases in comprehension which were obtained in our study.

The findings of Hill (1960) and Rankin (1963) support this explanation.

From the responses to the pre-questionnaire, it was possible to identify a few descriptive statements characteristic of the slow reader: he rarely does outside reading; he thinks that he would have better comprehension if he could remember all the main ideas and

details; he feels that he must read every word and that he must read slowly to retain the needed facts, yet he has difficulty recalling details, but when he tries to read faster he has difficulty getting the main ideas; and last, he is not satisfied with his present rate of reading.

When the subjects' responses on the post questionnaire were evaluated, it was noted that 67% of Group II (tried it three or four times) had positive attitudes; whereas, 53% of Group I (tried it once or twice) had negative responses toward the reading method suggested. It may be that since the majority of Group I held negative attitudes toward the Z method, that they did not practice it but instead practiced the other basic reading principles (avoid regression, etc.) which increased their reading speed. This would account for the rate increase even though they only tried it once or twice. This may also explain how Group II was able to make much larger gains. They formed favorable attitudes toward it and applied it in conjunction with the other basic reading principles.

The results of the t-tests indicated that both the factual and the control groups made significant increases in speed without a significant decrease in comprehension. The factual group showed the largest increase in speed.

The motivational group did show a significant difference in variability between pre- and post-tests. This may account for the fact that no significant increase in speed was found between the pre- and post-tests.

If one assumes that the subjects were following instructions and were reading as fast as they could without loss in comprehension, then the speed increases may be explained by examining the variability of each group.

The factual group had the smallest variability and the largest significant increase in speed. This was the group that was given suggestions on how to improve rate of reading. Their behavior was directed. They seemed able to improve simply by practicing the suggestions given to them.

Future research should extend the present study to include those subjects who were dropped because their initial comprehension scores were less than chance, since the study was controlled on comprehension, it may have produced a biased sample.

The validity of the two history tests should be re-examined. It is possible that the comprehension items are now common knowledge.

A longitudinal study should be conducted to determine whether the increases in rate are temporary or permanent.

In the future the post-questionnaire should contain questions pertaining to all the reading principles on the handout.

Summary

The present study was conducted using 132 Psychology students, male and female, to determine if speed could be increased without change in comprehension, and to determine whether students could

increase their rate by applying a few basic reading principles. The information was in the form of a handout. The subjects were to read the material and apply it where practical.

The results of the study indicated that it was possible to increase speed without change in comprehension; and that students, if given handouts describing methods for improving are capable of increasing their rate without the benefit of a formal reading course.

BIBLIOGRAPHY

- Anderson, V.L. & Tinker, M.A. The speed factor in reading performance, J. educ. psychol., 1936, 27, 621-624.
- Barbe, W.B., Teaching Reading: Selected Materials, New York: Oxford University Press, 1965.
- Blommers, Paul, and Lindquist, E.F., Rate of comprehension of reading, its measurement, and its relationship to comprehension, J. educ. psychol., 1944, 35, 449-473.
- Carlson, Thorsten.R., The relationship between speed and accuracy of comprehension, J. educ. res., 1949, 42, 500-512.
- Carlson, Thorsten.R., Effects of certain test factors on measurement of speed of reading, J. educ. res., 1951, 44, 543-549.
- Eurich, A.C., The relations of speed of reading to comprehension, School and society, 1930, 404-406.
- Gates, A.I., An experimental and statistical study of reading tests, J. educ. psychol., 1921, 12, 303-314, 378-391, 445-464.
- Groff, Patrick, Children's attitudes toward reading and their critical reading abilities in four content-type materials, J. educ. res., 1962, 55, 313-317.
- Hill, W.R., Factors associated with comprehension deficiency of college readers, J. dev. read., 1960, 3, 84-93.
- Kammann, R.A., Aptitude, study habits, and reading improvement, J. dev. read., 1963, 6, 77-86.
- Kershner, Alan M., Speed of reading in an adult population under differential conditions, J. appl. psychol., 1964, 48, 25-28.
- King, Irving, A comparison of slow and rapid readers, School and Society, 1916, 4, 830-834.
- King, Irving, A comparison of the efficiency of slow and rapid readers, School and Society, 1917, 6, 203-204.
- Laffitte, R.G., Analysis of increased rate of reading of college students in New developments in programs and procedures for college-adult reading, (Proceedings of The Nat'l. Read. Conf.), 1963, 12, 110-111.

- Maxwell, M.J., An experimental investigation of the effect of instructional set and information on reading rate. Paper read at the National Reading Conference, Dallas, Texas, December, 1964.
- Mueller, A.C., An experimental investigation of the relation between anxiety and perceptual accuracy on increasingly difficult materials projected with the tachistoscope. Reading and Study Skills Research Report #3-65, University of Maryland (mimeo), 1965.
- Pressey, S.L., and Pressey, L.C., The relative value of rate and comprehension scores in Monroe's Silent Reading Test, as measures of reading ability, School and Society, 1920, 11, 747-749.
- Pressey, L.W., and Pressey, S.L., A critical study of the concept of silent reading ability, J. educ. psychol., 1921, 12, 25-31.
- Preston, R.C., and Botel, Morton, Reading comprehension tested under timed and untimed conditions, School and Society, 1951, 74, 71.
- Rankin, Earl F., Sequential emphasis upon speed and comprehension in a college reading improvement program, J. dev. read., 1963, 7, 46-54.
- Rankin, Earl.F., The relationship between reading rate and comprehension in Problems, programs, and projects in college adult reading, Yearbook 1962, 11, 1-5.
- Robinson, Francis, P., Speed versus comprehension in reading—a discussion, J. educ. psychol., 1940, 31, 554-558.
- Seashore, R.H., Stackford, L.B., and Swartz, B.K., A correctional analysis of factors in speed of reading tests, School and Society, 1937, 46, 187.
- Spache, George D., Reading rate improvement or success for the wrong reason, J. dev. read., 1963, 7, 2-6.
- Stroud, J.B., and Henderson, Margaret, Rate of reading and learning by reading, J. educ. psychol., 1943, 34, 193-205.
- Stroud, J.B., A critical note on reading, Psychol. bull., 1942, 39, 173-178.

- Tinker, Miles, A., The relation of speed to comprehension in reading, School and society, 1952, 36, 158-160.
- Tinker, Miles, A., Speed versus comprehension in reading affected by levels of difficulty, J. educ. psychol., 1939, 30, 81-94.
- Tinker, Miles, A., Dr. Robinson on speed versus comprehension in reading: a discussion, J. educ. psychol., 1940, 31, 559-560.
- Tinker, Miles, A., Rate of work in reading performance as measured by standardized tests, J. educ. psychol., 1945, 36, 217-228.
- Traxler, A.E., The correlation between reading rate and comprehension, J. educ. psychol., 1932, 26, 97-102.

Suggestions for Improving Reading Speed

It is safe to say that almost anyone can double his speed of reading while maintaining equal or even higher comprehension: in other words, anyone can improve the speed with which he gets what he wants from his reading.

The average college student reads between 250 and 350 words per minute on fiction and non-technical materials. A "good" reading speed is around 500 to 700 words per minute, but some people read 2,000 words per minute or even faster on these materials. What makes the difference? There are three main factors involved in improving reading speed: (1) the desire to improve; (2) the willingness to try out new techniques; and (3) the motivation to practice, practice, practice.

We have outlined below a series of suggestions to help you improve your speed of comprehension. The purpose of this section is to enable you to gain confidence in your ability to read fiction and non-technical materials rapidly. Remember that most reading for pleasure and for general information can be done very rapidly.

Learning to read rapidly and well pre-supposes that you have the necessary vocabulary and comprehension skills.

Your goal is clear. By achieving a greater speed of comprehension, you will find that your college grades will improve, your pleasure in reading will increase and you'll have more time for other activities.

- (1) Eliminate the habit of pronouncing words as you read. If you sound out words in your throat or whisper them, you can read silently only as fast as you can read aloud. You should be able to read most material at least two or three times faster silently than orally.

Hearing the words as you read implies that you must translate the printed symbols into sounds before you can understand the ideas. People rarely talk as fast as 300 words a minute and a good stenographer rarely has to take dictation faster than 200 words a minute. You should be able to read 2-3 times as fast as you can talk. Therefore, if your reading speed is less than 300 w.p.m., the chances are good that you are sounding out words as you read.

If you are aware of sounding out or "hearing" words, try to concentrate on key words and meaningful ideas as you force yourself to read faster.

(2) Avoid regressing (rereading)

The average student reading at 250 words per minute regresses or rereads about 20 times per page. Rereading words and phrases is a habit which will slow your reading speed down to a snail's pace. Usually it is unnecessary to reread words, for the ideas you want are explained and elaborated more fully in later contexts. Furthermore, the slowest reader usually regresses most frequently; and because he reads so slowly, his mind has time to wander and his rereading reflects both his inability to concentrate and his lack of confidence in his comprehension skills.

An explanation of the role of eye-movements in reading will help to clarify this. As you read this sentence, your eyes are moving from left to right across the line of type. Although it feels as if they are moving smoothly, they actually are stopping frequently--these pauses we call fixations. In the paragraph below we have drawn lines through the words to illustrate the fixations of good and poor readers.

Eye-movenents--Slow Reader

2 1 5 3 4 6 7 8 10 9 11 12 13 14
 i/n th/e s/ix/th ye/ar of th/e Al/g/er/jan wa/r, than/ks t/o the
 15 17 16 18 19 20 21 22 23 25 24
 pa/tie/nt, of/ten ob/liqu/e ma/ne/uv/eri/ngs of Cha/rl/es de/Ga/ulle,
 26 27 28 29 30 31 32 33 35
 Fr/ance wa/s neg/otia/t/ing fr/om a/f/ar strong/er po/si/t/ion tha/n
 34 36 37 38 41 39 40 42 43
 an/yone cou/ld ha/ve p/re/di/c/ted tw/o yea/rs ea/rli/er.

Eye-Movements--Rapid Reader

1 2 3 4
 I n t h / e s i x t h / y e a r o f / t h e A l g e r / i a n
 5 6 7
 w a r , t h a n k s t o / t h e p a t i e n t , / o f / t e n o b / l i / q u e
 8 9 10
 m a n / e u v e r i n g s o f C h a r l e s d e / G a u l l e , F r a n c e
 11 12
 w a s n e g o t i a t i n g f r o m a f a r s t r o n g e r p o s i /
 13 14 15
 t i o n t h a n a n y o n e / c o u l d h a v e p r e d i c t e d
 16 17
 t w o / y e a r s e a r l i e r .

Notice how often the slow reader fixates and also how frequently he regresses or rereads.

In order to break the habit of regressing, practice reading straight through a paragraph. Don't let your eyes slip back.

The Z-Method of Rapid Reading

1. Practice moving your eyes across the page as indicated by the arrows on this paragraph. Note that when your eyes move from one line to the next, they don't go all the way to the first letter. Many students find it helpful to use their finger as a "pusher" to establish the Z-reading pattern. If you do this, make sure that your finger is pushing, not following your eyes and try to establish a regular rhythm to your reading. When you begin to use the Z-method, you will become painfully aware of your tendency to regress (i.e. re-read words and phrases.) Try to eliminate regressions completely during your practice sessions so that the strength of this habit may be broken. Usually you will find that re-reading is not necessary, for the idea or word is explained again further on.

Obviously, if you are reading difficult material such as text books, there may be many times when you would normally slow down, re-read or stop. For this reason, many students prefer to use a pencil so that they can check or underline points or words that they do not understand, and can keep on reading rapidly until they complete a section. Then they can go back and re-check the places they have marked. Try this method and you will probably find that many of the places that you checked initially were clarified by the time you completed reading the section. If they weren't, take time to read those points over again more slowly and carefully.

Notice the arrows on the paragraph you are now reading. If you follow these you will see that on every other line your eyes should move diagonally (in the reverse direction). This may seem hard to do at first, but practice it on newspaper columns, and you will find that it is not difficult. Try to keep your finger or pencil moving in a regular rhythm forcing your eyes to keep pace.

As you approach reading speeds of 700 to 800 words per minute, you will find that you must include two or more lines on the diagonal back-sweep

(See the arrows on this paragraph.) Also your eye-span will have increased so that you do not have to move as close to the ends and the beginnings of lines.

At speeds above 1000 words per minute, you may find it easier to use your whole hand running it down the page ahead of your eyes. (See Diagram A below) Or you may prefer to use a card to cover the material and push your eyes down the page faster. (See Diagram B. Below).

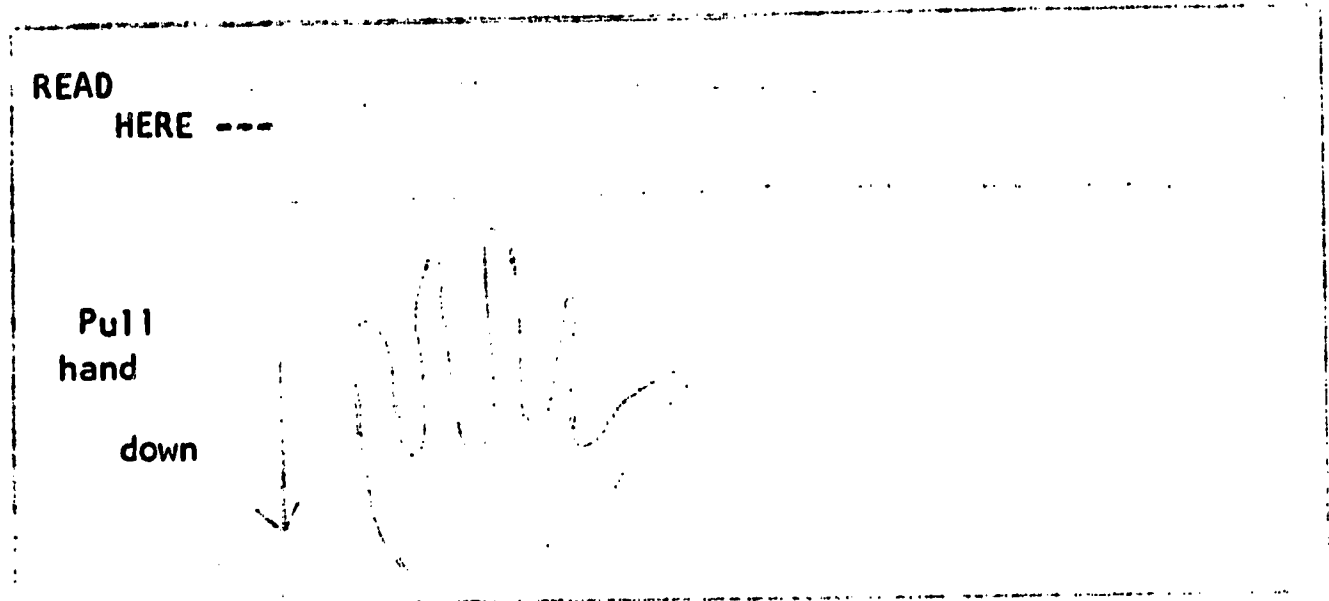


DIAGRAM A

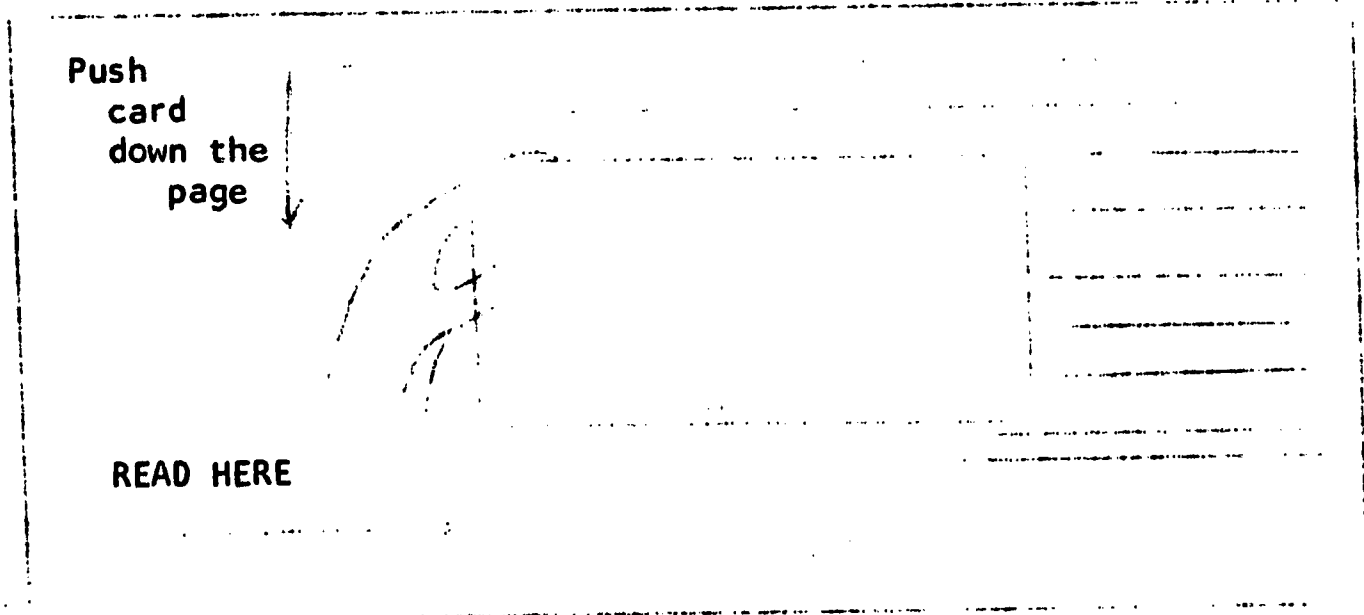


DIAGRAM B

HOW WILL BETTER READING BENEFIT YOU?

If you learn to read faster and with more understanding, you can do many jobs that require reading with efficiency. And you can save a great deal of time for other activities. These are only a few of the benefits from better reading, as this lesson will show.

YOU ACCOMPLISH MORE IN LESS TIME

Suppose that you are reading this book at the rate of about 200 words a minute. Suppose that, through your better reading program, you increase your rate to 300 words a minute - up 50 percent. And suppose that you raise your comprehension from 70 percent to 80 percent -- up about 15 percent.

You read more. Within an hour of reading time, you can read 50 percent more than formerly. In the same time as before, you can read three chapters instead of two, three books instead of two, and three magazine articles instead of two. During your reading time, you get much more done--and that is an important benefit.

You save time. At your increased rate, you can read 3,000 words in a book, magazine, or newspaper in 10 minutes instead of 15 minutes. You save five minutes in your reading time, a 33 percent saving. In two hours' time, you can read something that you used to take three hours to read. You save one hour--and that is a real benefit.

And while you read faster than before, you also read more efficiently. You get more from what you read because faster reading and greater understanding tend to go together.

IF YOU ARE IN SCHOOL, YOU CAN MAKE HIGHER MARKS

Reading is required in about 90 percent of the work done in college subjects. In courses in English, social studies, science, or mathematics, for example, you have to spend much time in reading textbooks, additional references, and other materials. To pass these courses, you have to be a reasonably good reader.

From your own experience you probably know that skillful reading and academic success tend to go hand in hand. Good students are usually good readers. And, of course, many poor students are handicapped by poor reading ability.

Several years ago Dr. Robert C. Aukerman, Jr., made a study of the reading abilities of good students and poor students in a Detroit high school. He selected 73 pairs of eleventh-grade pupils. In each pair both pupils had made the same intelligence test scores, but one pupil was a much better student than the other as determined by school marks.

Dr. Aukerman then gave all the pupils a number of reading tests; these tests measured reading comprehension and vocabulary development, in general and in specialized fields such as literature, history, science, and mathematics. From his study, Dr. Aukerman drew these conclusions:

Good students are much higher in general reading ability than are poor students. With few exceptions, they are also high in the reading abilities and vocabularies that are required in specialized fields.

If you are a student, you can probably make higher school marks by improving your reading. And this is true whether you are a poor, average, or good student.

Nancy, for example, was a superior tenth-grade student in a Chicago high school. She took a seven-week reading improvement course through which she increased her reading rate by 80 percent and kept her comprehension at 90 percent.

After completing the course, Nancy reported its benefits in this statement:

Improving my reading has helped me in several ways.

On my college aptitude tests there is a whole section which tests reading speed and comprehension. I'm sure my reading improvement helped me there.

In my school work I find that I am able to finish much more quickly that reading which does not require notetaking, and in outside reading there's been an amazing difference.

I'm doing a term paper on Ghandi and have had to read several books. Due to my faster reading, I've had more time to work on the paper.

Recently my art teacher asked me to read extra material about Modigliani; I found I was able to read it much faster than ever before. I also comprehended it very well.

I am sure that because of my special reading work I'll be able to do better college work.

By the end of the semester, Nancy had raised her marks in English and Biology from B-plus to A. She became a straight-A student.

IF YOU HAVE A JOB, YOU CAN DO IT BETTER

In general, the better you read the better you succeed in college. And the better you succeed in college the better able you are to get the job you want after graduation. In short, the greater your reading power the more likely you are to get ahead in the world of work.

Suppose that you have a job in a business, in a trade, or in a profession. On the job you must get much important information from a variety of printed materials--not only from books, magazines, and newspapers but also from letters, typewritten instructions, and special manuals. If you can read these materials quickly, accurately, and meaningfully, you have a better chance to succeed in your chosen career.

If you are an adult, you may feel that you already read well enough--that you do not need to improve your reading abilities. Or, you may feel that you should read better.

YOU CAN GET MORE JOY OUT OF LIVING

From the reading you do for recreation, you can get satisfactions that come in no other way. If you fill your leisure time with reading you can gain enjoyment that adds much to the zest of living.

Through reading you can live, in imagination, the lives of others. You can take part in the great events of the past--the discovery of America, the invention of the airplane, the development of wonder drugs, and the first splitting of the atom. In your mind's eye you can project yourself into the fantastic future--riding a jet-propelled space ship on a trip to the moon. You can build castles in the air, Utopias this world will never see.

You can rub elbows with presidents and prime ministers, kings and queens, conquerors and slaves, scientists and explorers, stars of stage or screen. You can be a surgeon performing a delicate operation; an airplane pilot taking off into the wide blue yonder; an engineer bridging tropical rivers--all through reading. For there is a book or magazine for your every interest, your every mood, your every taste.

Such enjoyment is out of your reach if reading is drudgery--that is, if you read slowly and laboriously. But this enjoyment is within your grasp if you can read rapidly, easily, and with understanding.

YOU CAN BE A BETTER PERSON

Reading can help you become the kind of person you want to be--well-adjusted, socially-liked, well-informed, and more interesting all around.

Through books, magazines, and newspapers you can know yourself better. You can extend your interests and improve your abilities. You can master the skills and acquire the habits that you need for happy and successful living.

Through reading, you can learn to understand other people and to get along with them much better than before. Because you are a social being, you want the recognition and approval of other people, especially of those whom you see every day. You are more likely to win and hold their friendship and respect if you are a well-read person.

People who read much and think about what they read are usually interesting and popular. They almost always have something worth-while to contribute to conversation wherever it occurs--in school, at home, on the job, during social gatherings.

In a real sense, the well-read man is "a man of distinction" wherever he is. And this has been true for many years. As Dr. A. Whitney Griswold, who is President of Yale University, once stated, there was a period in our history when our leaders "found time to read, and demonstrated in their own lives and works, the utility as well as the delight of reading. The four master builders, Hamilton, John Adams, Jefferson, and Madison, were probably the four most widely read men of their age." We do not know whether these leaders were great because they were well-read or were well-read because they were great. But there is no question that reading helped them to build and guide our nation in its early years.

Whether people achieve greatness or not, they can become better persons through reading. Both their present and future depend, at least in part, upon what they read and how they read.

If you are a poor reader, you read very slowly and get very little from what you read. You spend most of your reading time trying to cover what you are required to read--your textbook assignments, for example. As a result, you miss out on the wealth of reading materials that could enrich your life. Because your reading is limited, you as a person are limited. And you are only to a degree the person you might become.

But if you are a good reader, you read many things efficiently. You do your necessary reading within a short period of time and with good understanding. In the time left over, you read widely in fields that interest you--biography, travel, fiction, science, and so forth. You tap books, magazines, and newspapers as sources of information and enjoyment. You do more reading and get more from it. You become a "person unlimited," and there is real satisfaction in that.

From: Witty, Paul "How to Become a Better Reader", SRA.

Name _____ Class (Circle): Fresh. Soph. Jr. Sr.
(last) (first)
Date _____ Date Entered University of Md. _____ College _____

Questionnaire - Reading Experience

Directions: Please write the number of your answer to each question on the line on the left of each question.

- _____ 1. Have you ever had formal reading improvement training at the high school level or beyond? 1) yes 2) no. If yes, describe briefly the type of program and indicate where and when you took it.
- _____ 2. How would you describe the amount of reading you typically do - aside from course assignments and requirements?
- 1) read extensively (several books a week)
 - 2) read quite a bit (a book a week plus newspapers, magazines, etc.)
 - 3) read some (keep up with newspapers, magazines and an occasional book)
 - 4) limited outside reading (newspapers and an occasional magazine)
 - 5) very little outside reading
- _____ 3. What types of books do you prefer to read?
- 1) popular fiction
 - 2) good literature
 - 3) non-fiction scientific or technical
 - 4) non-fiction social science
 - 5) have no strong reading preference
 - 6) other (specify) _____
- _____ 4. How would you rate yourself on your enjoyment of reading?
- 1) enjoy reading very much
 - 2) like to read when other things aren't pressing
 - 3) am indifferent about reading
 - 4) would rather avoid reading if possible
 - 5) generally dislike to read
- _____ 5. In your opinion, adequate comprehension of a reading selection will take place if:
- 1) all main ideas and details are remembered
 - 2) the purposes and aims of the reader are satisfied
 - 3) the reader takes time to read the selection first rapidly and then slowly
 - 4) the reader takes account of the difficulty of the material
 - 5) the words of the reading are weighed and analyzed
- _____ 6. When trying to read rapidly, I feel that I:
- 1) tend to read almost every word
 - 2) cannot do it as fast as I'd like to
 - 3) get only a few ideas rather than as much as I'd like
 - 4) am able to read for ideas, skipping unimportant words
 - 5) tend to lose a good deal of comprehension

_____ 7. I would use skimming for:

- 1) finding out generally what a chapter of book is about
- 2) reading material I find difficult
- 3) reading light, easy materials
- 4) covering more words per eye-movement than usual
- 5) catching up with my assignments

_____ 8. When reading, I adjust my rate so that:

- 1) I get the highest comprehension
- 2) the reading may be done as rapidly as possible
- 3) my comprehension is adequate for the purpose of the reading
- 4) main ideas and details are clearly understood
- 5) it is flexible to the style of the author

Note: on the following questions, indicate whether you:

1. strongly agree
2. agree in general
3. disagree in general
4. strongly disagree

_____ 9. I feel that it is possible for most people to greatly improve their reading speed.

_____ 10. It is usually easy for me to get the main ideas from my reading quickly.

_____ 11. I find it difficult to keep up with the reading assignments in my college courses.

_____ 12. I read slowly but retain the facts I need well.

_____ 13. I am satisfied that my present reading skills are adequate for my needs.

_____ 14. I find it very difficult to recall details from my reading.

_____ 15. Extremely slow and careful reading or extremely rapid reading do not necessarily result in thorough comprehension.

END

NAME _____
(Last) (First)

Post Questionnaire
Reading Exp.

1. Have your reading patterns changed in any way during the past week?

If yes, explain.

2. When I took the tests last week, I was feeling:

- _____ much better than usual
- _____ slightly better than usual
- _____ about the same as usual
- _____ slightly worse than usual
- _____ much worse than usual

3. In taking the test today, I felt I was doing

- _____ much better than usual
- _____ slightly better than usual
- _____ about the same as usual
- _____ slightly worse than usual
- _____ much worse than usual

4. In taking reading tests like these, I usually

- _____ dislike them very much
- _____ feel neutral about them
- _____ enjoy taking them

5. As I was taking the tests, I felt that I was

- _____ trying very hard to do them well
- _____ trying fairly hard to do them well
- _____ trying very little to do them well
- _____ not trying at all to do them well

6. If you tried the Z-method, answer the following:

How often did you use it?

- _____ tried it once or twice
- _____ tried it 3 or 4 times
- _____ tried it every day

What was your reaction to the method?

Please write any other comments you may have about the experiment on the back of the paper.

**LIST OF UNIVERSITY OF MARYLAND READING AND STUDY SKILLS
LABORATORY RESEARCH REPORTS**

Reading and Study Skills Laboratory Research Reports Spring, 1964.

(Contents include: 1. Darby, Charles A. Jr. "Comparison of College Students Referred to a Reading and Study Skills Program with Students Whose Entrance Into the Program is Self-Initiated" 2. Gessow, Elaine. "An Analysis of the Relationship between Scales of the California Psychological Inventory and Student Attendance in the Reading and Study Skills Program at the University of Md" 3. Herrald, Fletcher H. III. "Analysis of Pre- and Post-Test Scores in Reading and Study Skills of CAI, College Aims Students at the University of Maryland, Fall semester, 1963")

Maxwell, Martha and Zitterkopf, Deanna. "Evaluation of the Writing Workshop offered PCSS students during the summer of 1964. Progress Report #1." RSSL Research Report #65-01. Jan. 1965.

Maxwell, Martha and Ross, Mamie. "An Evaluation of the University of Maryland Reading and Study Skills Satellite Program." RSSL Research Report #65-02. Feb. 1965.

Maxwell, Martha, Mueller, Arthur C. and Horn, Arthur. "Experiments in Reading #1." RSSL Research Report #65-03. April, 1965. (Includes: "An Experimental Investigation of the Relation Between Anxiety and Perceptual Accuracy on Increasingly Difficult Material Projected with the Tachistoscope," and "An Experimental Investigation of Two Methods of Improving Rate of Reading with the Accelerator.")

Maxwell, Martha J. and Mueller, Arthur C. "An Experiment on the Effect of Motivational Appeal vs. Techniques on Reading Rate Improvement in a Group of College Students." Reading and Study Skills Laboratory Research Report #65-04. April, 1965.

In Preparation:

Maxwell, Martha J. and Foxe, Esther. "An Experimental Evaluation of the Effect of a Special Study Skills Program on Grades in Freshman Chemistry."

Maxwell, Martha J. "Correlates of Academic Success and Persistence in the Reading and Study Skills Laboratory for a Group of Marginally Achieving Students."