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A study of the merits of filmstrip-oriented reading instruction as opposed to teacher-developed instruction at the secondary level

Doris V. Cummins

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A STUDY OF THE MERITS OF FILMSTRIP-ORIENTED
READING INSTRUCTION AS OPPOSED TO TEACHER-DEVELOPED
INSTRUCTION AT THE SECONDARY LEVEL

by

Doris V. Cummins

A DISSERTATION
SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
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194

This dissertation has been
approved for the Graduate Committee
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CHAPTER I

THE PROBLEM

Introduction

In analyzing the progress of research studies which originally began in the laboratories of Europe, Gray points out that since 1920 the scope of research in reading has broadened steadily. "As a result we are far more conscious today than formerly of the complexity of reading problems and are far less certain of the answers to many of them."¹ The fact is also recognized that research in reading must continue on a broad scale if reading is to serve ultimately its broadest function as an aid to personal development, scholastic progress, and social betterment.

Serious limitations to progress, Gray suggests, are due to the fragmentary character of much of the current scientific work. Isolated problems are attacked, findings reported, then never reviewed or continued. Furthermore, many studies reported have been conducted without adequate design controls, or their interpretations may not be widely applicable today. Nevertheless, Gray concludes that "much available evidence is so significant that it serves as a valuable guide in reorganizing and improving instruction in reading

¹William S. Gray, Encyclopedia of Educational Research, rev. ed., Walter S. Monroe, ed. (New York: Macmillan Co., 1950), p. 1087.

at all levels and in defining with increasing clarity the role of reading in contemporary life."²

While deploring the fact that "It often comes as a surprise to embryonic researchers that so much has been written about certain topics, yet so few studies support what has been written,"³ Robinson still maintains that investigations are essential to gain greater insight into the ways children and youth learn and the use they make of various reading skills and abilities.

Strang suggests the research approach as a means of understanding the dynamics of reading and concludes that such insights "might either confirm or revolutionize our methods of teaching and testing reading."⁴

Concern with the quality, quantity, and direction of current research is sounded again and again in the proceedings and yearbooks of conferences in recent years. Unwarranted implications drawn from short-term comparisons may invalidate conclusions. A given method may actually inhibit the development of other aspects of reading. Others warn that continuous attention should be given the Hawthorne effect. Gates found "many statistical procedures work well

²Ibid, p. 1088.

³Helen M. Robinson, "The Future of Reading Research," Reading as an Intellectual Activity, J. Allen Figurel, ed., IRA Conference Proceedings, Vol. 8, (New York: Scholastic Magazines, 1963), p. 280.

⁴Ruth Strang, "Reactions to Research on Reading," Educational Forum, XXVI (January, 1962), p. 192.

only when the data fall into certain strait jackets."⁵ Campbell and Stanley advise "The experiments we do today, if successful, will need replication and cross validation at other times and under other conditions before they can become an established part of science, before they can be theoretically interpreted with confidence."⁶

The results of Barton's study of the training of productive investigators in reading may point the way to improve the graduate programs for producing higher quality researchers.⁷ The new Handbook of Research on Teaching prepared by the American Educational Research Association should serve as a useful guide to many and contribute to the reliability of data offered.

Earlier research seemed to indicate that until recently the elementary school was held almost entirely responsible for the development of whatever reading abilities the student acquired. Present opinion holds that this approach was impractical and unrealistic since the degrees of reading competency vary with each educational level, and skills taught at the elementary level are not adequate to meet increased reading demands.

⁵Arthur I. Gates, "The Future of Research in Reading," Education, LXXXII (May, 1962), p. 550.

⁶Donald T. Campbell and Julian C. Stanley, "Experimental and Quasi-Experimental Designs on Research on Teachings," Handbook of Research on Teaching, N. L. Gage et al. (Chicago: Rand McNally, 1963), p. 173.

⁷Allen H. Barton, "The Sociology of Reading Research," Teachers College Record, LXIII (November, 1961), pp. 94-101.

When empirical evidence rather than emotional opinion is the criterion, it is clear that reading problems exist in the high school, not because of any failure on the part of the elementary schools, but because the need of the average individual for higher and higher reading skills has outgrown the responsibility of the grade school.⁸

Despite the high standards and requirements of a highly competitive society, high schools have not universally recognized the need for continued reading instruction. Where elementary schools and colleges have forged ahead in revising their reading programs, research evidence points to a curious apathy on the part of the nation's high schools to meet the challenge. Thus, it has frequently become the responsibility of the English teacher at the secondary level to continue the teaching of reading skills, and too often the skills taught have been limited by the content of the subject and thus restricted to those skills required in the study of literature. Uman asks:

"Who will teach the skill of reading a mathematics problem, of classifying facts in the science laboratory, of drawing inferences from the social studies text, of following directions in the industrial arts shop?"⁹

Practical educators everywhere are looking for ways to meet the challenge. How can intellectual standards be raised to help every high school student accomplish more in every subject? Must every teacher be a teacher of reading, according to the old adage? Are in-service programs for the subject-matter teachers one solution to

⁸Hugo Hartig, "Developmental Reading: What Is It?", Reading in High School, Vol. 1 (Fall, 1963), p. 5.

⁹Shelley Uman, New Trends in Reading Instruction (New York: Bureau of Publications, Teachers College, Columbia University, 1963), p. 6.

improving reading efficiency of our high school students? Another possibility is the establishment or revision of present high school reading programs seeking motivating techniques, material geared to present needs and interests, stressing flexibility of approach and emphasizing developmental reading skills.

Where formerly a dearth of materials existed, today in keeping with our affluent society, educators may find a surplus of materials, all attractively packaged, many guaranteed by their promoters to lead to spectacular reading gains. A host of visual aids as well as workbooks, study skills texts, mechanical aids now bid for the reading teacher's attention.

Educators have been exhorted to experiment with different techniques to discover ways of teaching reading more effectively and have been censured for their negligence in not making greater use of visual media. Yet, at the same time, teachers have been warned to "wait and see", and not to accept exaggerated claims because the effectiveness of mechanical aids in teaching reading is still considered controversial by many authorities.

Cognizant of the "knowledge explosion" that has resulted in the "new math", the "new science", and now the "new English," the writer became interested in the comparatively new technique of using filmstrips in the direct teaching of higher level reading skills. Filmstrips are not new, but the particular program considered is rather new. Spache, referring to the initial and repetitive learning values inherent in the use of filmstrips in teaching reading, admonishes teachers of the necessity of discovering "their peculiar values for

children of different mental abilities.¹⁰

Guss cites the most frequently agreed upon uses of films and filmstrips as:

1. Stimulating interest
2. Providing a concrete basis for building generalizations and developing concepts
3. Contributing to vocabulary development
4. Overcoming verbalization which lacks a perceptual basis for understanding
5. Adding variety to instructional materials
6. Providing experiences not otherwise available, and
7. Providing a research tool.¹¹

On the other hand, such eminent authorities as Harris and Traxler insist that research studies do not at present supply evidence either conclusively favorable or unfavorable on the value of mechanical aids.^{12 13}

Statement of the Problem

The aim of this experimental study was to determine the value of direct teaching of reading skills through a commercially

¹⁰ George D. Spache, Towards Better Reading (4th ed. rev.; Champaign: Garrard Publishing Co., 1963), p. 298.

¹¹ Carolyn Guss, "Films, Filmstrips and Reading," The Reading Teacher, Vol. 17 (March, 1964), p. 441.

¹² Albert J. Harris, How to Increase Reading Ability (4th ed. rev.; New York: David McKay Co., Inc., 1961), p. 538.

¹³ Arthur S. Traxler, "What Does Research Suggest About Ways to Improve Reading Instruction?", Improving Reading in the Junior High School, Bulletin No. 10 (Washington: U.S. Government Printing Office, 1957).

prepared filmstrip program, "Tachist-O-Filmstrips", as opposed to a teacher-developed instructional program at the secondary level.¹⁴

Specific objectives centered about the comparative values of the two programs in their effects on:

1. General reading achievement
2. Vocabulary growth - both recognition and meaning
3. Comprehension accuracy
4. Rate of reading
5. Interest in reading

Scope and Limitations

This study was conducted during the second semester of the 1964-1965 school year at Nicolet Union District High School in Glendale, Wisconsin. It was limited to 48 students with 24 students in each of two equivalent groups. The students were matched as closely as possible. There was a slight difference in the students' intelligence quotients, chronological ages, and reading achievement scores. However, when the t-test was applied, the difference was not statistically significant. After the study was completed, the gain in reading progress was measured by means of standardized reading tests.

Definition of Terms

In this study the term "teacher-oriented" was used to refer to a class where the teacher conducted the class and was the nucleus of the learning experience. The term "machine-oriented" refers to a

¹⁴"Tachist-O-Filmstrips," Learning Through Seeing, Inc., Sunland, California.

class where the teacher manipulated a machine (in this case a filmstrip projector with a tachistoscope flasher attachment), using lecture and lesson material prepared by the manufacturer of the filmstrip program.

To avoid misinterpretation of the term "filmstrip program", the writer wishes to emphasize the fact that the "Tachist-O-Filmstrip" program is not "programmed instruction" or "programmed learning" as defined by Fry. While the "Tachist-O-Filmstrip" program does contain certain elements which are required of "programmed instruction", it fails to meet many of the criteria. What is a program? According to Fry, program means many things to many people, but in the sense of teaching machines and programmed instruction, it generally means:

1. Subject matter is broken into small bits (frames).
2. A student response is required (writing a word, pushing a button, turning to a specific page, or just thinking an answer).
3. The student is immediately told the correctness of his response (feedback) and sometimes why he is wrong.
4. Each student may vary the rate to suit himself.
5. The frames are arranged in careful sequence.
6. The learning goals are specific (stated in such a way that they can be tested - even a long sub-head would offer help).
7. The audience is specific (fifth-grade reading ability required, completed first-year algebra, etc.).
8. The revisions of the program are made based on tryouts (tryout group specified so teacher can compare it with her own class).
9. Proof of learning is desirable (there should be some evidence that a specified group has learned, how much, on what test).

10. Additional information, though not always part of programming, will help teachers in selecting the program.¹⁵

¹⁵ Edward Fry, "Programmed Instruction in Reading," The Reading Teacher, Vol. 17 (March, 1964), p. 453.

CHAPTER II

REVIEW OF RELATED LITERATURE

Trends in High School Reading Programs

A review of the reading conference yearbooks reveals much more space devoted to college-adult reading programs than to high school programs. In 1962 Heilman raised the question, "Have we shown marked lack of interest in high school reading programs, and have we abdicated responsibility in this area?"¹⁶ The seven previous yearbooks covering the years 1955 through 1961 contained only one paper on the topic of high school reading. This was a discussion of the relationship of high school and college reading programs in which Kingston cautioned us to remember that reading is a developmental process and that a large percentage of high school students are deficient in a number of important skills.¹⁷

Heilman also queried whether college-adult reading programs are primarily concerned with "rate" and are they overly machine-oriented? Data for answering this question can be found in the descriptions of programs operating in colleges, universities, as well

¹⁶ Arthur Heilman, "Problems, Programs, and Projects in College-Adult Reading," Eleventh Yearbook of the National Reading Conference, Emery P. Bliesner and Ralph C. Staiger, eds. (Milwaukee: Marquette University, 1962), p. 208.

¹⁷ Albert J. Kingston, Jr., "Integrating the Reading Program into the Curricula," Ninth Yearbook of the National Reading Conference for Colleges and Adults. (Texas: Texas Christian University Press, 1960), pp. 107-109.

as in industry and the military. In the same seven years a total of twenty articles in the yearbooks deal with such programs. In addition, at least a half dozen more deal with the use of mechanical devices. Heilman adds that in the majority of reports "mechanical devices are not appendages nor are they used as exercises on the periphery of the program; rather they seem to be close to the heart of the program -- a major or essential part."¹⁸

Throughout this particular yearbook it seems one can detect a feeling which might be characterized as an ambivalence toward mechanical devices and their efficiency in college reading programs. Each of the predictions of future trends in college-adult reading expresses either the conviction or the hope that the move will be away from machine-centered, rate-oriented programs.

The inference or conclusion Heilman arrives at is this: "If our programs are primarily machine and rate-oriented, we should either accept and justify such programs or else put energy into working out better balanced programs."¹⁹ He believes we must re-examine our aloofness to high school reading programs because in essence this area is also adult reading. He warns that if a vacuum is permitted to develop in high school programs, that vacuum will be filled by a rush of mechanical gadgets promoted by manufacturers who claim that their success is greatly owed to established college reading programs.

Reviewing the studies on the use of machines, Eliesner also noted that a number of reports beginning in 1952 were concerned with

¹⁸Heilman, p. 208.

¹⁹Ibid., p. 217.

the use of machines or mechanical equipment for teaching reading skills.²⁰ Relatively few of the pertinent studies were specific attempts to evaluate values or contributions of particular equipment or procedures, but a number of implications or indications was yielded. Among the researchers of the era were Thompason and Wooster, Barry and Smith, Glock, Wilson, Manolakes, Kingston, Sommerfield, Sheldon, Holmes, Acker, Westover, and Spache. There continued to be suggestions that effectiveness was accomplished through a combination of methods and procedures.

In reports cited in the 1955 yearbooks a continued use of machines and mechanical devices was noted, with rate controllers, tachistoscopes, and films seeming to be used most frequently. A trend toward increased use of non-mechanical materials and a decrease in time spent in using, but not in amount of, mechanical equipment was also noted.

Discussing the trend of reading research in the past decade, Williams concluded,

The present state of reading research differs greatly from that of 1958. Within this period there has been a renewal of interest in the theoretical analysis of the basic reading process, and recent contributions by psychologists and linguists have been of great interest in focusing interest on basic studies. Considerable attention is also being given to the development of new and efficient techniques of instruction. Certainly, not all recent research has been centered around these developments. However, these trends are new, influential, and promising.²¹

²⁰ Emery P. Eliesmer, "The Role of Speed in Reading," Changing Concepts of Reading Instruction, J. Allen Figurel, ed., IRA Conference Proceedings, Vol. 6, (New York: Scholastic Magazines, 1961), p. 217.

²¹ Joanna P. Williams, "Reading Research and Instruction," Review of Educational Research, Vol. 35, No. 2 (April, 1965), p. 147.

The trend towards wider experimentation in the use of various media is likely to continue, according to many of the reading authorities. In discussing automated teaching of reading, Smith suggests,

There are several influences in our present civilization which are presaging wider use of automated facilities for teaching reading: the population explosion, the scarcity of teachers, and the technological revolution.... We shall probably see many additional film developments in reading in the future. At the present time it is the teaching machine that is claiming the spotlight in automated teaching. Reading, however, is one of the last of the subjects to yield to the teaching machine. In evaluating the use of the teaching machine in teaching reading, we need to recognize that the machine makes its best contribution to learnings that have to be fixed, facts that have to be memorized, processes that have to be made automatic.... The teaching machine may be used to give practice on certain aspects of reading, but certainly it would be quite improvident to think that we could hand over the major responsibility for reading instruction to a teaching machine, and proponents of teaching machines do not expect this to be done.²²

Brown, Lewis, and Harclerod believe it is no longer necessary to debate whether audio-visual materials are superior to traditional materials in reaching important school objectives. Optimum learning occurs when various types of instructional materials are used, each for its valuable but not necessarily unique contribution. They are quick to point out that the ultimate responsibility for creating a favorable learning environment and for achieving desired educational goals continues to rest with the classroom teacher.²³

Most authorities agree there is no adequate substitute for the

²² Nila E. Smith, "Evaluation of Reading in American Schools," Challenge and Experiment in Reading, J. Allen Figurel, ed., IRA Conference Proceedings, Vol. 71 (New York: Scholastic Magazines, 1962), p. 184.

²³ James W. Brown, R. B. Lewis, and F.F. Harclerod, AV Instruction: Materials and Methods (New York: McGraw-Hill, Inc., 1959), p. viii.

the teacher's unique ability to plan and organize the learning experiences and to select, adapt, and appropriately relate instructional materials for the achievement of student learning.

Science and technology have provided tools and knowledge to make accelerated learning possible. There are excellent mechanical and electrical devices to implement learning, and there is a vast background of tested knowledge about how to improve learning. Still, it must be remembered that there can be no guarantee that students will grow or change in desirable ways simply because their learning experiences are conducted through use of educational media, old or new.²⁴

Opinions Regarding the Contribution of Instruments

Tachistoscopic devices were first used as teaching aids during World War II when the instruments were borrowed from the psychology laboratory to aid in training men for aircraft identification. The decrease in perception time for aircraft identification suggested to reading authorities that perhaps the visual perception span required in reading might be improved by using a similar device. Thereafter, research concerning the efficacy of tachistoscopic training has produced extreme reactions ranging from unqualified approval to total disapproval. What accounts for the difference in reactions? Bermuth and Aken thought that these differences may be the result of incomplete control of variables important in the reading process. They found little attempt has been made to control other factors in order to isolate the effects of tachistoscopic training.²⁵ Also, the research

²⁴Ibid., p. viii.

²⁵John R. Bermuth and Cleatus C. Aken, "Is the Tachistoscope a Worthwhile Teaching Tool?", The Reading Teacher, Vol 14 (January, 1961), p. 172.

appeared to them to neglect the idea that perception is increased through the use of meaningful materials, for the materials projected tachistoscopically have often been meaningless. For instance, increasing one's recall of serial numbers has sometimes been called good practice in remembering license plates, but is this particularly useful in the reading process?

For those who wish to learn more about step-by-step methods of tachistoscopic procedures for reading improvement, a clear exposition has been given by Barnette.²⁶

Some feel that reading teachers have paid dearly for the contribution of instrumentation because too frequently improvement in reading has come to be identified almost exclusively with the increase of reading speed. Ehrlich states his attitudes towards the most popular types of machines:

1. Visual training devices are useful for students requiring visual training. When used by qualified optometrists they can produce greater ease in reading. When used to speed reading, they have the advantages and disadvantages of reading films.
2. Reading films are useful as goads to higher reading speeds, but most are employed in a setting unlike the typical reading situation. Learning to read in a pattern predetermined by a film-maker cannot be helpful for more than a small number of students who watch a film at any given time.
3. Accelerators are useful as goads and have the advantage of being used by one student at a time. They are employed in

²⁶Gaspar C. Barnette, Learning Through Seeing with Tachistoscopic Teaching Techniques (Dubuque, Iowa: W. C. Brown Co., 1951).

settings that are more nearly approximate to the true reading situation.

4. Tachistoscopes are toys.

He concludes, "there is one overriding drawback to all these instruments; they do not help students improve reading comprehension. A teacher using only a reading manual, books, and some mimeographed material can do a great deal toward helping to build comprehension. He can also do at least as well as machines in building speed."²⁷

In discussing the advantages of such aids, Marni suggests that it is important that students understand what devices can and cannot do. They cannot work miracles. In her opinion, what they can do is to motivate and encourage students to apply themselves to compete with their previous performances. She believes mechanical aids can also give students a feeling of security because they know the machines are reliably exact and not subject to human variations. A student's results are measured more accurately by a machine presenting a reading film or flashing material at shorter and shorter intervals. Lastly, while the instructor is not allowing for individual idiosyncrasies while using mechanical aids with a group, these aids help to indicate individual problems that may be present and can be attacked later.²⁸

However, Tinker questions the value of the use of mechanical devices, quoting Anderson and Dearborn, Harris, Gates, and Bond as

²⁷Eugene Ehrlich, "Use of Instrumentation in the Teaching of Reading," Reading as an Intellectual Activity, J. Allen Figurel, ed. IRA Conference Proceedings, Vol. 8, (New York: Scholastic Magazines, 1963), p. 180.

²⁸Alma L. Marni, "Mechanical Aids in a Reading Center," Reading Improvement, Vol. 2, No. 3, (Spring, 1965), p. 55.

substantiating his own opinions. "In every experiment that has attempted to evaluate the use of pacing machines, the results reveal that they are no more effective in increasing rate of reading than are less complicated but sound classroom procedures." He then qualifies this harsh statement somewhat by adding, "Nevertheless, reading pacers may be employed advantageously at times, particularly in combination with other methods. Such use may provide quickly a well-motivated procedure to increase rate in reading easy material. And attitude toward reading may improve. But there may be difficulty in transferring the improved rate to more difficult material. As pointed out by Harris, the carryover to natural reading situations is sometimes disappointingly small. Whether the favorable effects are due to the use of the reading pacer or to an increase in motivation is difficult to estimate."²⁹

Spache bases his opposition to rate-training machines on what he calls scientific facts which indicate the limitations of training intended to increase rate of reading. He advocates instead a program of flexibility with training in rapid reading, surveying to plan reading purpose, skimming, scanning, and intensive or study-type reading, rather than emphasis on machines.³⁰

Taylor is strong for perceptual training and suggests the use

²⁹Miles A. Tinker, "Uses and Limitations of Speed of Reading Programs in Schools," Speed Reading Practices and Procedures, Russell G. Stauffer, ed. 44th Annual Education Conference Proceedings, Vol. X, (Newark: University of Delaware, 1962), p. 9.

³⁰George D. Spache, "Is This a Breakthrough in Reading?", The Reading Teacher, Vol. 15 (January, 1962), pp. 258-266.

of instruments "so as to provide the teacher with the degree of control she requires over the rapid-fire and often involuntary responses of the students." He advocates tachistoscope and controlled reader training.³¹ In further defense of mechanical aids, Smith and Dechant conclude that "training on mechanical devices is frequently accompanied by rate improvement. It is also generally true that rate gains have an adequate degree of permanence....Rate gains are also obtainable without mechanical aids in programs that are book-centered."³²

If machines are presumed to have certain advantages for students, what contribution do they make to teachers? Fry says:

There are at least two things that the teaching machine has done for the classroom teacher:

- (1) It has created a much more vital interest in the problems of educational psychology.
- (2) It has offered us some real insights into the development and use of curriculum materials.³³

Most educators agree that mechanical aids can be used quite effectively as a supplement to learning. Visual aids, Summers points out, are a means to an end and not an end in themselves. "The only rationale for the inclusion of visual aids in reading is the contribution they make to creating interest and adding to the understanding

³¹Stanford Taylor, "Speed Reading vs. Improved Reading Efficiency," Speed Reading Practices and Procedures, Russell G. Stauffer, ed. 44th Annual Education Conference Proceedings, Vol. X, (Newark: University of Delaware, 1962), p. 72.

³²Quoted by Miles Tinker and Constance McCullough, Teaching Elementary Reading, 2nd ed. (New York: Appleton-Century-Crofts, Inc., 1962), p. 227.

³³Edward Fry, "Significant Issues in Reading," Changing Concepts in Reading Instruction, J. Allen Figurel, IRA Conference Proceedings, Vol. VI (New York: Scholastic Magazines, 1961), p. 178.

of content."³⁴

An optimistic note is sounded by Maehr who considers that if a large portion of the teaching load can be handled by auto-instructional devices, then teachers can be freed to be concerned about the individual who is engaged in learning as never before.³⁵

Specifically, what have been the reactions of those educators who have actually used machines? Millman sent an opinion questionnaire to twenty elementary, junior high, and high school teachers to obtain reactions toward tachistoscope equipment, pacers, and accelerators used in their schools. At the lower levels, the teachers felt that the most benefit from the use of instruments was derived by the least retarded pupils. At high school level, teachers were of the opinion that the equipment was most beneficial to superior readers but that it was useful for most classes. Pupils generally agreed that they had improved in reading and most indicated their desire to continue using the special equipment.³⁶

Mechanical Aids Available for Teaching Reading

According to Wells current aids can be classified into two major categories. The first includes those primarily motivational

³⁴Edward G. Summers, "Utilizing Visual Aids in Reading Materials for Effective Learning," Perspectives in Reading, No. 4: Developing Study Skills in Secondary Schools, Harold Herber, ed. (Newark, Delaware: International Reading Association, 1965), p. 99.

³⁵Martin L. Maehr, "Programed Learning and Role of the Teacher," Journal of Educational Research, Vol. 57, No. 10, (July-August, 1964), p. 556.

³⁶Joseph Millman, "Reactions of Selected Teachers and Pupils to Three Types of Specialized Reading Equipment," Reading as an Intellectual Activity, J. Allen Figurel, ed. IRA Conference Proceedings, Vol. 8, (New York: Scholastic Magazines, 1963).

in purpose, creating in the student an awareness of his need for better reading skills and for better understanding of the reading process. The other, larger category is designed to provide for the direct development of specific reading skills such as rate or flexibility, while increasing or at least maintaining comprehension.³⁷ Most of the films and filmstrips available attempt to do both. Most of the rate and comprehension films are intended for group instruction and can be used with an effective-size audience. Most of them also use comprehension tests and provide cumulative records so that the student can keep track of improvement in rate and comprehension.

Reading pacers are individualized rate improvement devices that are adapted to use either in a school laboratory situation or in the home. They encourage or force the student to read at a pre-determined speed set by the pacer.

The tachistoscope was one of the earliest devices introduced for reading improvement and is still being used. Utilizing a special overhead projector for large slides, the teacher may produce his own materials for different grade levels prepared by the class or he may use the commercially prepared materials. More recently a tachistoscopic device using 35 millimeter filmstrips has been offered with extensive materials available. The tachistoscopic principle is also combined with other types of devices.

Another machine presents material by a system of masking so that the student's eyes are led from left to right across the screen

³⁷William P. Walls, "Audio-Visual Aids for Reading Teaching," Reading in High School, Vol. 1, (Fall, 1963), p. 14.

and from line to line. Students cannot regress. The material is presented on 35 millimeter film.

Research Studies

Although many of the experiments reported in this paper were on college or primary level, implications found in each showed need for further study on other levels and were consequently included. Pertinent to this study were:

- (1) Reviews of studies concerned with visual training devices built on the tachistoscopic principle;
- (2) Reviews of studies concerned with filmstrips or training films, such as the Controlled Reader, used with programed workbook material;
and, to a lesser degree,
- (3) Reviews of studies concerned with mechanical pacers or accelerators.

Several of the mechanical devices described incorporate elements of "programmed learning" since they attempt to include built-in devices for self-correction, reward, reinforcement, immediate knowledge of results, and are broken into small units. Since we were not here concerned with the wider application of programmed learning as explained earlier, experiments of programmed learning per se were not reviewed here.

Reviews of Studies Concerned with Visual Training Devices Built on the Tachistoscopic Principle

An excellent review of factors in reading which can be affected by a tachistoscope can be found in Sperling's study. In the literature she reviewed, tachistoscopic training had apparent

values. Two factors, reading rate and comprehension, were affected as a result of direct training with the use of the machine. She cited significant gains reported by Weber and Rust over control groups for college students. Goins and Cason found that pupils in the primary grades who were trained on the machine did not make significantly greater gains over the control groups who received regular reading instruction. These two investigations, however, found that some types of readers made greater gains than others as a result of the training and recommended that further research be conducted. Sperling pointed out that these studies indicated that tachistoscopic training methods have been used effectively and are methodologically effective.

No previous attempt had been made to determine the effectiveness of such training upon groups segregated according to reading performance, however, until Sperling's study. She used 120 junior high pupils divided into three experimental groups on the basis of reading scores from the Iowa Silent Reading test. The training period was twelve weeks for forty-five minutes daily. Keystone graded materials were used. Tachistoscope tests were given regularly and emphasis was upon speed and comprehension. Among the results Sperling noted were the following:

- (1) Greatest gain was made by the slow readers
- (2) Least gain was made by the control group
- (3) Of the experimental groups, the superior readers showed the least gain, but it was felt the test was not a true measure of their reading abilities since ten of the twenty-seven placed in the 99th percentile.

The author concluded that the study demonstrated the necessity of providing regular reading instruction at the eighth grade level if reading improvement is to be achieved at this grade because the control group made less gain than could normally be expected. She also concluded that since thirty of the forty-five minutes were spent daily in tachistoscopic training that this training affected the reading ability of all ability levels. She concluded that the instrument was a strongly motivational device which should be utilized at the secondary level for a daily training period not to exceed twelve weeks and that this training should be concluded while interest is high and before pupils become bored.³⁸

Review of Studies Concerned with Filmstrips
or the Controlled Reader

A study of 120 male students at Holy Trinity High School in Chicago was conducted to determine whether a mechanical aids reading program is more beneficial than a basic skills reading program at the secondary level. Henning found that "the established statistical datadoes not warrant the conclusion that a mechanical aids reading program is more beneficial than a basic skills reading program." In defense of the mechanical aids program, he pointed out, however, that the book approach required more direct

³⁸Florence F. Sperling, "A Study to Determine the Progress Made by Differentiated Reading Groups as a Result of Tachistoscopic Training," (unpublished Master's dissertation, University of Washington, 1960), pp. 44-45.

teacher time. Using both higher and lower ability sections, he concluded that the higher ability sections showed more interest in mechanical pacers and reading training films, and that the interest of lower ability sections tended to decrease after the novelty of mechanical aids disappeared. There was a small but not significant difference between means in favor of the book approach.³⁹

Bottomly reported an experiment with the Controlled Reader by Kiehn and Moss who found the major use of the machine to be in boosting speed, although it had a beneficial if delayed effect on reading comprehension and vocabulary development. The best use was with average or better achievers who do not at first read rapidly. They concluded that such training should be considered a natural element of the long-term developmental reading program.⁴⁰

At the elementary level George conducted an experiment with first-grade pupils to ascertain the value of reinforced reading instruction with filmstrips in the direct teaching of reading skills. In her excellent survey of literature regarding the importance of the use of visual aids in the teaching of reading, the assumption is validated that visual aids supply the needed motivation, vicarious experiences, and interest needed in the teaching of reading by such workers as Dale, Finn, Hoban, and Hester. She reviewed the studies

³⁹Brother Thomas Henning, C.S.G., "Mechanical Aids Reading Program vs. Basic Skills Reading Program at the High School Level," (unpublished Master's dissertation, The Cardinal Stritch College, 1962), p. 36.

⁴⁰Forbes Bottomly, "An Experiment with the Controlled Reader," Journal of Educational Research, Vol. 54, No. 7, (March, 1961), p. 269.

of Enekhousen, Witty and Fitzwater, Voland, Wittich and Schuller, and Zellhofer who noted a positive improvement in reading comprehension because interest was so high. A significant fact revealed by studies she reviewed of Witty and Goldberg, McCracken and Lichenstein was that filmstrips contribute towards the improvement of reading precisely because the picture or story can be kept before the students for as long a time as needed, thus providing the necessary repetition of words. George found filmstrip teaching to have a significant effect on the teaching of word perception; that it improved comprehension; and that it created greater interest in reading.⁴¹

Warren reported the results of a seven-week pilot study involving the Controlled Reader in one of two selected classes at junior high level. She matched two groups of grade 8 students on reading scores from the Iowa Silent Reading test. Her experimental group had a lower mean I.Q. (102.5) than the control group (106.2). Both groups received training three periods a week. The experimental group used both the tachistoscope with digits and ten words which were copied after exposures and the controlled rate projector. The control group used a hand-held cardboard with identical digits and copied the same words. Likewise, they read the same selections on the projector while they were timed and motivated to read rapidly.

⁴¹Sister Mary Carol George, C.S.J., "An Experimental Study of the Value of Reinforcing Reading Instruction with Filmstrips," (unpublished Master's dissertation, The Cardinal Stritch College, 1964).

Vocabulary development, comprehension quizzes, and other activities were the same for both groups. Warren found that both groups made excellent gains for such a short period but that the experimental group made greater gains in rate with comprehension and in relative efficiency. The control group made greater improvement on the sub-test paragraph meaning, possibly because they used the SQRRR technique. The investigator concluded that a balanced reading program should stress variety of techniques for best overall results.

Utilizing the experience of the fall pilot program, a modified and enriched program was initiated in the spring of 1960. Both instruments and textual materials were integrated into the program with greater emphasis on specific reading and study skills. For purposes of evaluation and comparison with the pilot groups, twenty-three seventh graders were tested before and after the spring program with the Iowa test. Although gains were not as high as those achieved by the instrument groups during the pilot program, students did considerably better than the non-instrument pilot group, particularly on rate.⁴²

The Massapequa High School conducted a reading program for college-bound high school seniors to determine effects on college board scores and gains on the Cooperative Test of Reading Comprehension. Dotrin described the program as intensive training in reading skills plus use of the Controlled Reader and EDL filmstrips. As a result, average

⁴²Mary Bay Warren, "The Massapequa Junior High School Reading Program," Journal of Developmental Reading, V (Summer, 1962), pp. 244-255.

gains for a semester of work, two periods a week are estimated at about 50 points on college boards, but some students jumped up to 150 points in two semesters.⁴³

At the college level Nikas conducted an experiment with upperclassmen in two groups. He taught the control group the first semester and the experimental group the second. The class met for a full semester twice weekly for one hour periods. In the control group classes the teacher became intellectually involved with the students. In the machine-oriented class the teacher acted as a recorder for the class. The mechanical aid used was the Perceptoscope made by the Perceptual Development Laboratories. This machine is a 16 millimeter film projector which combines characteristics of the tachistoscope, motion picture projector, and reading accelerators or pacers. The Nelson-Denny (Form A) reading test was used at the beginning of the experiment. No significant difference was found in the students' grade indexes. At the conclusion Form B indicated no significant difference existed between the two groups. The Pearson Product Moment Correlation was used to examine relationships between raw score point gain and college grade index for each group. A correlation of coefficient of .004 was found between gains in reading and grade point average for the experimental group. This indicates that students in this group with either high or low grade indexes tend to make similar gains. The correlation of coefficient of the control group was .40 between gains and grade point average.

⁴³Ruth M. Dobrin, "The Massapequa Story," Journal of Developmental Reading, IV (Spring, 1961), pp. 87-89.

indicating that students with high grade indexes in a teacher-oriented reading class tend to make higher gains than students with lower indexes. Nikas concluded there was no significant difference in reading improvement between a class which is teacher-oriented and another defined as machine-oriented.⁴⁴

Another experiment pertinent to this study despite the fact that it was limited to the elementary rather than the secondary level was McDowell's. He examined the relative effectiveness of the Controlled Reader as measured by reading rate, comprehension, vocabulary and overall reading test scores of sixteen fifth grade Oregon public school children compared with scores of a matched group taught by conventional methods. The Gates Reading Survey was used as a pre and post test. Different teachers worked with each group to an extent of four classes a week. No significant differences were reported between groups according to post-test data. The writer thus questioned the value of the machine approach while recognizing the obvious motivational value early in the experiment, observing that "reactions at the end of the study, however, indicated much of the interest had died."⁴⁵

Another interesting study to evaluate the effectiveness of two reading improvement programs independently planned by respective teachers was reported by Cawley et al. This was not so much a study of specific materials but rather the extent to which the program itself

⁴⁴George B. Nikas, "A Study of Teacher-Oriented vs. Machine-Oriented Developmental Reading Classes at the College Level," Journal of Reading, Vol. 8 (January, 1965), p. 214.

⁴⁵Neil A. McDowell, "The Effectiveness of the Controlled Reader in Developing Rate, Comprehension, and Vocabulary as Opposed to the Regular Method of Teaching Reading," Journal of Experimental Education, XXXII, (Summer, 1964), pp. 363-9.

could yield extensive gains. Two groups (one with 72, the other with 77 pupils) at the junior high level were selected and instructed for twenty-five minutes daily using the SRA Reading Laboratory, Reading for Understanding, Progress Folders with Better Reading Books, and the Controlled Reader. They were instructed one semester, tested, then tested again in May after non-instruction. Group A gained 2.32 years, which was significant at the .005 level. Group B's gain was also significant at the .005 level.⁴⁶

With the installation of a new Developmental Reading Laboratory at West Bend High School in 1962, Urbas and Dummett attempted to determine student progress in reading speed and comprehension and to obtain additional data upon which to build future studies. Sixty-six correlated pairs were chosen from the sophomore class and were given the Triggs Diagnostic Reading Test. The experimental group received two sessions per week of laboratory training at regular intervals but with varying schedules during the first semester of the school year. Laboratory training consisted of fifty-two minute sessions during which the students received special instruction while reading at the Shadowscope Reading Facers, viewing the Iowa Reading Films, and working with the Controlled Reader. All sections received Cosper-Griffin's timed essays followed by comprehension tests. On the days not spent in the laboratory the experimental group attended regular English classes and studied the same areas of English that the control group was studying. The control group received a

⁴⁶J. F. Cawley, J. Chiffin, and H. Brunning, "An Evaluation of a Junior High School Reading Improvement Program," Journal of Reading, Vol. IX (October, 1965), p. 26.

proportionate amount of reading during the experimental period by concentrating on literature. At the close of the experiment the experimental group was 188 words per minute ahead of the control group although a difference of only about four words per minute existed at the beginning of the study. The two groups had almost identical gains in comprehension.

Following the experiment the original control group was given the same reading training in the laboratory which the experimental group had been given, and then tested for achievement. No significant differences existed. Furthermore, the experimental group was given an alternate form of the Triggs test after a period of four months had elapsed in an effort to measure the extent to which speed and comprehension skills changed with the passage of time during which no additional training was given. Of the apparent mean gain of 180 words per minute the experimental group had attained, 124 words per minute was indicated to be retained, or approximately 69% retention of reading speed skill over the period during which the greatest loss of learning could be expected.⁴⁷

Reviews of Studies Concerned with Mechanical Pacers or Accelerators

An experiment with pacers was reported by George in 1955. He found the smaller the section in which a student worked, the more likely he was to earn a high grade, irrespective of the instruction he had

⁴⁷Report of Experiment in Developmental Reading reproduced by Psychotechnics, Inc., 105 West Adams st., Chicago, Ill.

been given.⁴⁸

Another study on pacers was conducted by Thornton who reported significant gains in rate for 40 college-bound seniors using accelerators and other materials over a control group not receiving instruction. There was no significant difference, however, in achievement in vocabulary and comprehension. As a result, it was decided that future courses would de-emphasize mechanical aids, and would instead concentrate on purposeful reading, flexibility, reading for main ideas and details, intensive reading, and vocabulary development. When such a course was organized, the results and the opinions of experienced teachers seemed to indicate important gains, not only in rate, but in comprehension and vocabulary development.⁴⁹

Despite the lack of control groups several well-planned experiments with pacer training have been reported. Marquis describes a developmental reading program involving 700 high school students in Indiana and presents comparative data of three classes. Students reported to a reading laboratory once a week for a minimum of thirty sessions. Laboratory facilities included texts, library books, teacher-developed exercises in comprehension, vocabulary, skimming, and study skills. Also included was reading with pacers. Analysis of pre and

⁴⁸Clay E. George, "An Evaluation of Selected Methods of Using Reading Pacers," The Fourth Yearbook of the Southwest Reading Conference for Colleges and Universities, (Texas: Texas Christian University Press, 1955), pp. 40-41.

⁴⁹C. M. Thornton, "Two High School Reading Improvement Programs," Journal of Developmental Reading, III (Winter, 1960), pp. 115-122.

post test results on the Cooperative Reading Comprehension Test showed an average percentile rating gain of 8 for seniors, 3 for juniors, and 10 for sophomores.⁵⁰

Another interesting report was described by Summers in which the faculty of East High School at Duluth, Minn. attempted to measure gains during a six-week block of instruction for a group of five sophomore classes during the 1962-63 school year. The reading specialist and English teachers worked together simultaneously switching the groups midway during a period. Speed development consisted of group work and individual practice with Shadowscope pacers. The major question was to determine whether the differential procedures and materials produced significant gains in reading for three separate ability levels within the total group. Equivalent forms of the Diagnostic Reading Test (Survey Section) were administered prior to and upon completion. Then, according to Large-Thorndike intelligent quotients, the groups were stratified into three equal groups of high, middle, or low intellectual levels.

Among the results listed: the total group made significant gains on all three sub-sections of the standardized test. When the total group was stratified, each of the intellectual ability level groups made significant gains from pre to post test scores. The program diversified materials and instructional techniques sufficiently to enable students of differing abilities to profit from the instruction.

⁵⁰Bettylee Fults Marquis, "Developmental Reading - New Albany High School, Journal of Developmental Reading, Vol. 5, No. 7 (Autumn, 1961), pp. 58-62.

and the experiment was also beneficial to in-service training of English teachers who observed and helped provide instruction, then later carried the burden of instruction in additional classes.⁵¹

Rate training was also given to 56 college freshmen divided into three equated groups according to a report by Laffitte. Group A received skimming practice only. Group B had perceptual training and mechanical paced reading. Group C combined the treatments. Standardized tests were given at the beginning, after one month, and also after two months to assess relative gains in rate and comprehension. Analysis of variance and computations of actual differences for each group revealed significant rate gains during the first month and insignificant gains during the second month. Only Group C gained significantly in comprehension.⁵²

Summary

It would seem that research studies substantiate the view that optimum learning occurs when various types of instructional materials are used, each for its valuable contribution. This includes visual and mechanical aids or devices becoming increasingly available to the reading teacher. While a number of respected authorities continue to insist that as good results may be achieved without the use of instrumentation, the actual studies quoted imply that mechanical aids used as supplementary instructional materials do achieve desirable gains.

⁵¹Edward G. Summers, "Evaluation of Reading Gains in a Secondary School Reading Laboratory," The Reading Teacher, Vol. 17 (January, 1964), p. 255.

⁵²Rondeau G. J. Laffitte, "Analysis of Increased Rate of Reading of College Students," Journal of Developmental Reading, Vol. 6, No. 7 (Spring, 1964), pp. 165-174.

They are not a necessity but are an interesting adjunct to the learning situation if the school budget permits their inclusion. No leading authority denies that the ultimate responsibility for creating a favorable learning environment and for achieving desired goals continues to rest with the classroom teacher.

CHAPTER III

THE PROCEDURE

This experimental study was undertaken for the purpose of ascertaining whether, and to what extent, a commercially prepared filmstrip program would increase general and specific reading skills of secondary level students as measured by standardized instruments.

Because of planned expansion of services scheduled for the future as well as an increasing awareness of its responsibility to provide a reading program efficient and profitable in terms of teacher effort as well as student progress, Mrs. Eileen Sargent, the Curriculum Coordinator for Nicolet Union District High School, wished to evaluate the merits of the "Tachist-O-Filmstrip" program.⁵³ The writer was an intern teacher at the school during the 1964-65 school year and was thus able to participate in the experiment.

Nicolet Union District High School is located in Glendale, Wis., one of the upper socio-economic suburbs northeast of metropolitan Milwaukee. Five public elementary and one parochial grade school at present send their graduates to Nicolet. Approximately 1,500 students comprise the student population with more than 85% of the graduates continuing academic training at the college level.

The freshman class was selected for this study because the administration at Nicolet noticed in recent years that incoming freshmen

⁵³Of the fourteen sets in this series, usage was limited to the following: Seeing Skills (Set G); Word Mastery (Set B); Phrase Mastery (Set B); and Reading Mastery and Development (Set A). Complete description will be found in Appendix B, p. 74/

were experiencing adjustment difficulties in the academic area. A study of the scores from tests administered the spring prior to entering high school gave evidence of a number of prospective freshmen with discrepancies between their verbal aptitude and total potential ability scores. It was thought that these discrepancies in some cases might well be due to reading deficiencies.

Description of the Testing Program

The Large-Thorndike Intelligence Test⁵⁴ was administered in the spring of 1964 to all incoming freshmen. This multi-battery test was used to establish the level and rate of mental development. The reading ability of the participants was determined by the Gates Reading Survey (Form 1).⁵⁵ The sub-tests as well as the total reading scores were considered, giving an indication of speed, vocabulary, comprehension, and total reading ability. Because they contain elements relevant to this study, it was decided to use the Wide Range Vocabulary Test (Form B)⁵⁶ as well as an informal test of comprehension and speed of reading.⁵⁷ These were administered before and after the experiment which lasted six weeks. Form 2 of the Gates Reading Survey was administered at the end of each six-week period as well as an equivalent form of the informal test. No measures of oral reading ability were taken.

⁵⁴Irving Lorge and Robert L. Thorndike, Large-Thorndike Intelligence Tests, 1957 Edition. (New York: Houghton-Mifflin Co.).

⁵⁵Arthur I. Gates, Gates Reading Survey Tests, (Bureau of Publications, Teachers College, Columbia University).

⁵⁶C. R. Atwell and F. L. Wells, Wide Range Vocabulary Test (New York: Psychological Corporation, 1937).

⁵⁷"The Eskimo Test," Craig Reader workbook (Los Angeles: Craig Reader).

Sargent administered the tests to four of the freshman English classes as part of another study conducted by the Reading Department at Nicolet. Test results were available, however, for this experiment. Many students were recommended for reading classes as a direct result of this screening. Others were suggested by the Guidance Department in a list of sixty-two freshmen identified as having a discrepancy between their verbal and total abilities on the Lorge-Thorndike Intelligence Test. This list was then circulated to all teachers asking them to make their own observations and refer to the reading specialist those who might need help. Subsequently, forty of these students were tested individually by the reading teachers, although due to scheduling problems, not all were able to receive reading instruction as hoped. From this group twenty-three were selected for the study on the basis of chronological age, intelligence quotient, and average reading ability. Others who received class instruction with this group were not included in the study.

Both reading teachers administered and scored initial tests for this group. All final tests were administered and scored by the two reading teachers.

The Problem of Equating the Groups

In planning this experiment external factors were carefully limited and controls established. The first problem was that of determining equivalent groups. Subjects were chosen from the freshman class, although two sophomores eventually participated. Identical pairing was not planned; nevertheless, the subjects were equivalent on the basis of chronological age, intelligence quotient, and average reading ability. Statistical procedures were applied to verify the data of significance

and relationship. The mean, standard deviation, standard error of the mean, and standard error of the differences of the means were computed for each group separately. The t-test was employed for ascertaining significance of differences. Data in Table 1 shows the results of the processes involved.

There was one month difference in mean chronological age favoring the control group, but the variability was about the same. The t-ratio indicated no statistically significant difference between both groups on the basis on chronological age.

The data in Table 1 also indicated the intelligence quotient mean scores of the Large-Thorndike Intelligence Test differed by .37 in favor of the experimental group, which also appeared to be a little more homogeneous than the control group. The t-ratio of .71 indicated that the two groups did not differ significantly and were equated as to mental abilities.

The average total reading scores according to reading grade level are also presented in Table 1. The test of significance confirmed that the two groups were initially comparable in reading achievement.

In order to obtain information on specific reading abilities the sub-tests of the Gates Reading Survey were also administered. A comparison of the initial mean scores of the two groups is reported in Table 2. Differences in reading speed, vocabulary, and comprehension remained insignificant, confirming the fact that both groups possessed approximately the same ability in reading. In an effort to complete testing in two average class periods and to give a suitable ceiling to

TABLE 1

MEAN CHRONOLOGICAL AGES, INTELLIGENCE QUOTIENTS, AND
 AVERAGE READING GRADE SCORES OF EQUATED GROUPS
 (N=24)

Tests	Mean		S.D.		S.E.M.		Diff.	S.E.D.	t-value	Confidence Level
	Exp.	Control	Exp.	Control	Exp.	Control				
C.A. (months)	176.75	177.08	4.25	4.36	.88	.91	.33 ^a	1.02	.32	Insig.
I.Q.	118.50	118.13	7.70	6.71	1.61	1.40	.37 ^b	.52	.71	Insig.
Reading	9.27	9.27	1.25	1.31	.26	.27	.004 ^b	.04	.09	Insig.

^aDifference favors control group

^bDifference favors experimental group

TABLE 2

COMPARISON OF THE INITIAL GATES READING SURVEY SCORES, FORM I, FOR
 RATE, VOCABULARY, AND COMPREHENSION - EXPERIMENTAL AND CONTROL GROUPS
 (N=24)

Gates Reading Survey	Mean		S.D.		S.E.M.		Diff.	S.E.D.	t-value	Confidence Level
	Exp.	Control	Exp.	Control	Exp.	Control				
Rate	9.14	9.14	1.34	1.93	.27	.40	.00	.24	.00	Insig.
Vocabulary	10.14	10.13	1.39	1.36	.29	.28	.01	.28	.05	Insig.
Comprehension	8.57	8.61	1.76	1.60	.36	.33	.04	.27	.15	Insig.

all students, the Gates tests were highly timed, with a total of twenty minutes permitted for completion of the entire test. The Speed and Accuracy section was timed for 4 minutes as stated in the Manual of Directions; the Vocabulary section at 8 minutes; the Level of Comprehension Test at 8 minutes. The Manual gives 20 minutes as the maximum time permitted to complete each of the latter two sections.⁵⁸ This adaptation of time needs to be considered in interpretation of the test results. Grade scores for all pupils probably would have been higher with the maximum timing permitted. However, in comparing the groups in the experiment, all participants were timed in the same manner.

Knowledge of vocabulary recognition in an untimed situation was measured at the beginning of the study to determine whether any difference existed between the two groups in this area. Data from Table 3 show the initial comparison of the scores obtained on the Wide Range Vocabulary Test. The figures reveal that a very real difference existed between the control and experimental groups as measured by this test. The control group was favored at the .01 level. Possible explanations for the apparent difference in vocabulary ability between this test and the vocabulary sub-test of the Gates Reading Survey previously described may in part be due to the timing of the Gates, whereas the students were given unlimited time to finish the Wide Range. The content of the two tests is also quite different. Vocabulary choices in the Gates test are words more likely to be in the student's present

⁵⁸ Manual for the Gates Reading Survey, (Bureau of Publications, Teachers College, Columbia University), rev. 1960, p. 1.

TABLE 3

COMPARISON OF INITIAL WIDE RANGE VOCABULARY SCORES, INITIAL SCORES
ON INFORMAL SPEED AND COMPREHENSION TEST - EXPERIMENTAL AND CONTROL GROUPS
(N=24)

Tests	Mean		S.D.		S.E.M.		Diff.	S.E.D.	t-value	Confidence Level
	Exp.	Control	Exp.	Control	Exp.	Control				
Wide Range Vocabulary	61.83	65.33	5.65	7.37	1.18	1.54	3.50 ^a	1.52	2.30	.04
Informal Comprehension (Percentage)	67.50	65.60	11.90	13.80	2.48	2.88	1.90 ^b	4.45	.42	Insig.
Informal Speed (wpm)	198.79	250.25	33.41	94.73	6.97	19.77	51.46 ^a	22.59	2.27	.05

^aDifference favors control group

^bDifference favors experimental group

realm of knowledge whereas many words in the Wide Range test are not commonly known unless the student reads widely. The Wide Range test measures recognition, while the Gates attempts to measure both recognition and knowledge of word meaning. This difference in initial vocabulary knowledge was not a deterrent factor in the equating of the two groups, however, because the criteria established were age, intelligence, and general reading ability.

An informal appraisal of rate of speed in words per minute and accuracy of comprehension was made at the beginning of the experiment. Data from Table 3 indicate that the two groups were not significantly different in the percentage of questions comprehended but were significantly different at the .05 level of confidence in the mean speed of reading. The fact that the control group appeared to have the advantage in speed of reading may have accounted for their higher scores on the Gates sub-tests which were highly timed. Those who did not finish the tests due to lack of time naturally obtained lower scores.

Preparation - Teaching Procedure

Experimental Group. - In order to control extraneous factors during this experiment, definite steps in planning the reading program were established. After selecting the population and equating the two groups, the necessary materials for the study were secured. The experimental group used "Tachist-O*Filmstrip" sets, a commercially prepared program which employed the tachistoscopic technique and was based on the principle that brief exposure of material requires attention and develops concentration requisite to comprehension.

The filmstrips presented forms, numbers, code groups, words, phrases, and sentences of gradually increasing difficulty with which students are presumably taught to give sharp attention, to expand vocabulary, to see words in thought units, to comprehend and retain what is read. The manufacturer intends that this logical sequence of teaching will lead students from the basic reading skills to critical, perceptive reading, and concurrently, to increased self-confidence.

The filmstrip program gave practice in both silent and oral language as students responded orally and/or in writing to the exposed targets. "Tachist-O-Filmstrips" may be used with classes of regular size, small groups, or individuals. Each film began with a statement of its subject, instructions to the teacher, directions and examples for the student, and the lesson plan. The lesson units were then flashed, immediately followed by review or by questions and answers. It was expected that through such carefully corrected techniques, the student would have immediate knowledge of results and reinforcements for increased retention.

Four steps in improving reading skills were emphasized in teaching the experimental group. Materials designed to improve attention, concentration, accuracy, and confidence were used initially. The second step was vocabulary development in which word lists, prefix and suffix mastery, Greek and Latin roots were explored. Emphasis in step three was phrase reading at a glance. Improved retention, comprehension, and reading rate improvement were the goals of the fourth step. The typical six-week lesson plan for the program is contained in the Appendix.⁵⁹

⁵⁹Appendix B, p. 73.

Control Group. - The control group followed a rather rigid course of intensive vocabulary work for three weeks followed by equally intensive instruction in comprehension skills the final three weeks. Speed training as such as limited in and incidental to the control program, occurring in short, timed tests of comprehension rather than as isolated drill.

Materials used in the control group were chapters and/or exercises from:

Reading Skills,⁶⁰ (text)

High School Reading, Book I,⁶¹ (text)

Better Work Habits,⁶² (workbook)

Efficient Study Skills,⁶³ (workbook)

Reading-Thinking Skills⁶⁴ (duplicated masters)

WITI-TV broadcast reprints⁶⁵

Miscellaneous newspaper and periodical clippings

All of these materials were part of the Reading Department curriculum library and were available previously with the exception

⁶⁰Evelyn N. Wood and Marjorie W. Barrows, Reading Skills (New York: Henry Holt and Company, 1958).

⁶¹Alex M. Caughran and Lee H. Mountain, High School Reading, Book I (New York: American Book Company, 1961).

⁶²Rachel Salisbury, Better Work Habits (Chicago: Scott, Foresman and Company, 1932).

⁶³Mildred Downes, Efficient Study Skills (Cambridge, Mass: Educators Publishing Service, 1961).

⁶⁴Ethel S. Maney, Reading-Thinking Skills (Elizabethtown, Pa.: Continental Press, 1962).

⁶⁵WITI-TV, Channel 6, Milwaukee, Wis.

of the Reading-Thinking Skills which were purchased specifically for use in this study. The writer also devised work sheets and tests, samples of which are included in the Appendix.⁶⁶

Daily lesson plans and a six-week schedule for the control group were written out in detail by the writer. Both appear in the Appendix.⁶⁷

Controls. - Daily classes of 55 minutes were utilized during each six-week period for the second semester of the school year. Both groups divided their periods into equal amounts of instruction and practice in applying the skills taught in order to eliminate homework assignments.

While the educational background and teaching experience of the two participating teachers were not comparable, the difference in background did not appear to seriously limit the success of the experiment. The control group teacher benefitted from the guidance and direction Mrs. Sargent, a doctoral candidate at Syracuse University. The writer had completed required reading courses for a master's degree at the Cardinal Stritch College and had completed one semester's teaching under the internship program when this study was begun. Both teachers were equally enthusiastic and interested in the project.

Treatment of Data

Upon completion of each of three six-week periods of teaching a final set of tests was administered. An equivalent form of the Gates Reading Survey, the same form of the Wide Range Vocabulary Test, and comparable informal tests of comprehension and speed of reading were

⁶⁶

Appendix C, p. 78-85.

⁶⁷

Appendix C, p. 76 - 77.

given. Statistical procedures were applied to the data and tests of significance were calculated. Comparative figures of initial and final tests for each group's progress as well as comparison of both groups were tabulated and analyzed.

CHAPTER IV

INTERPRETATION OF RESULTS

This experimental study was pursued to evaluate the value of filmstrip teaching in a reading improvement program at the secondary level. A total of forty-eight students participated. Upon completion of each of three six-week periods of intensive teaching of reading skills, the final set of tests was administered. Statistical procedures were applied to the data of the investigation in order to determine their significance. The mean, standard deviation, standard error of the mean, standard error of the differences of the mean, the t-ratio and coefficient of correlation were computed for each variable. Comparative figures of the initial and final tests for both groups were carefully tabulated and analyzed.

Analysis of the Data Related to Final Achievement
Gates Reading Survey - Total and Sub-Tests Scores

In Table 4 are recorded the results of the final Gates Reading Survey-Form II tests for the experimental and control groups. In total reading achievement the t-value did not indicate that either group was significantly superior. It would seem that students made equal gains with or without filmstrip material. On the sub-tests of the Gates, however, differences may now be noted. In reading rate the two groups had identical means at the beginning of the study. At the close the difference between the means was now .85 in favor of the control group with a t-value of 2.36 significant at the .05 level. In vocabulary measurement the two groups continued to be closely matched with a t-value of

TABLE 4

COMPARISON OF FINAL GATES READING SURVEY SCORES, FORM III, TOTAL READING, RATES, VOCABULARY, AND COMPREHENSION FOR EXPERIMENTAL AND CONTROL GROUPS (N=24)

Gates Reading Survey	Mean		S.D.		S.S.M.		Diff.	S.D.D.	t-value	Confidence Level
	Exp.	Control	Exp.	Control	Exp.	Control				
Total Average Reading Grade	10.37	10.59	1.14	1.10	.237	.22	.22 ^a	.24	.91	Insig.
Rate	10.52	11.37	1.63	1.18	.34	.24	.85 ^a	.25	2.36	.05
Vocabulary	10.79	10.79	1.03	.91	.21	.19	.00	.21	.01	Insig.
Comprehension	9.83	9.62	1.62	2.00	.33	.37	.21 ^b	.12	1.70	.10

^aDifference favors control group

^bDifference favors experimental group

.019 on the Gates sub-test. Only in comprehension is there a slightly significant change in favor of the experimental group. The experimental group had a t-value of 1.7, significant at the .10 level. Two factors might be considered in interpreting these figures. According to the pattern of instruction adopted, the control group instruction was not integrated. Students were taught comprehension skills for three weeks, then vocabulary for the other three weeks. Comprehension development, however, is a continuing process. In the experimental group program, the filmstrip content permitted continuous reinforcement of comprehension skills, rather than isolated development. In addition, the experimental group had specific rate training practice which may have better prepared them to complete the highly timed final Gates sub-test. The control group may have obtained higher scores had maximum timing on this section been permitted.

In Table 5 the results of final testing on the Wide Range Vocabulary Test and informal measures of speed and comprehension are given. The same form of the vocabulary test was given since another form was not available. The control group had been favored at the beginning of the experiment and continued to have the higher mean, though not as highly significant as initially.

Using selections of comparable length and difficulty, a check of informal speed and comprehension followed the study with the following results. The experimental group had the higher mean in comprehension with a 6.25 difference between means as compared with a 1.90 difference between original means. The t-value was now 1.84, significant

TABLE 5

COMPARISON OF FINAL WIDE RANGE VOCABULARY TEST SCORES, FINAL SCORES
ON INFORMAL SPEED AND COMPREHENSION TEST - EXPERIMENTAL AND CONTROL GROUPS
(N=24)

Tests	Mean		S.D.		S.E.M.		Diff.	S.E.D.	t-value	Confi- dence Level
	Exp.	Control	Exp.	Control	Exp..	Control				
Wide Range Vocabulary	66.58	69.79	5.31	7.61	1.10	1.58	3.21 ^a	1.16	2.76	.02
Informal Comprehension (Percentage)	80.20	73.95	11.67	12.5	2.43	2.60	6.25 ^b	3.40	1.84	.10
Informal Speed (wpm)	250.17	258.71	39.09	97.39	8.16	20.33	8.16 ^a	22.98	.38	Insig.

^aDifference favors control group

^bDifference favors experimental group

at the .01 level of confidence. In speed of reading the control group was favored initially. The difference between means diminished from an original 51.46 words per minute to 8.16 words per minute. The t-value was .371. In this test the speed factor would not have accounted for the difference in comprehension improvement since the students read at their own most comfortable rates. Therefore, it would seem that the "Tachist-O-Filmstrips" series did motivate highly in improving comprehension. On the Gates test, speed was timed on very simple and short selections, whereas the informal test was of considerably higher level as well as much longer.

Comparison of the Gates Reading Survey Tests for the Experimental and Control Groups

A final comparison of means for each of the variables was made for scores obtained at the end of six weeks. Since the calculations involved the same groups, beginning to end, the formula for t-test including correlation was used.

The final achievement of the experimental groups is recorded in Table 6. A comparison of means of initial and final scores on the Gates Reading Survey for Total Reading Achievement indicated highly significant improvement. Reading the table, it may be noticed that the experimental group also experienced a mean increase in every variable which in turn affected the t-ratios in favor of the final test score. In each sub-test also the gain reported was statistically significant. Changes in variability were minimal. Rate improvement for the experimental group gave a t-value of 5.60, also highly significant

TABLE 6

COMPARISON OF MEANS OF INITIAL AND FINAL GATES READING SURVEY TEST SCORES
 EXPERIMENTAL GROUP
 (N=24)

Gates Reading Survey	Mean		S.D.		S.E.M.		Diff.	S.E.D.	r	t-value	Confidence Level
	Initial	Final	Initial	Final	Initial	Final					
Total Average Reading Grade	9.27	10.37	1.25	1.14	.26	.23	1.10	.19	.70	5.67	.001
Rate	9.14	10.52	1.34	1.66	.27	.34	1.38	.24	.70	5.60	.001
Vocabulary	10.14	10.79	1.44	1.03	.29	.21	.65	.26	.53	2.49	.02
Comprehension	8.57	9.83	1.76	1.62	.36	.33	1.26	.28	.67	4.40	.001

at the .001 level of confidence. There is little possibility that the existing differences can be attributed solely to chance.

On the vocabulary sub-test the t-value of 2.49 was significant at the .02 level. The t-value of 4.40 on the comprehension sub-test was significant at the .001 level of confidence.

Results reported in Table 7 indicated highly significant improvement for the control group in total reading achievement. Considering the short period of the experiment, the figures indicated marked improvement. In all sub-tests of the Gates gains were significant. In rate, the probability was significant at .001; in vocabulary, the results were significant at .01; in comprehension, at .01 also. As would be expected, the correlation coefficients were positive and moderately high on all tests - the highest in total reading achievement, .693.

Comparison of Wide Range Vocabulary and Informal Speed and Comprehension Tests

Tables 8 and 9 illustrate the initial to final gains made by each group on the longer vocabulary and informal speed and comprehension tests. The same form of the Wide Range Vocabulary Test was used for pre and post-testing. At the close of the experiment, the experimental group showed a t-value of 5.78 which was highly significant. The control group had a t-value of 3.23, significant at the .01 level.

The selection chosen for an informal measure of gains in speed and comprehension was comparable in length and difficulty to the one used initially. The experimental group had a mean of 67.6% comprehension initially and finished with a mean of 80.2%. Its speed was

TABLE 7

COMPARISON OF MEANS OF INITIAL AND FINAL GATES READING SURVEY TEST SCORES
CONTROL GROUP
(N=24)

Gates Reading Survey	Mean		S.D.		S.E.M.		Diff.	S.E.D.	r	t-value	Confidence Level
	Initial	Final	Initial	Final	Initial	Final					
Total Average Reading Grade	9.27	10.59	1.31	1.10	.27	.22	1.31	.20	.69	6.48	.001
Rate	9.14	11.37	1.93	1.18	.40	.24	2.23	.32	.58	6.79	.001
Vocabulary	10.13	10.79	1.36	.91	.28	.19	.66	.22	.66	2.89	.01
Comprehension	8.61	9.62	1.60	1.80	.33	.37	1.01	.33	.52	3.04	.01

TABLE 8

COMPARISON OF MEANS OF INITIAL AND FINAL WIDE RANGE VOCABULARY TEST SCORES,
 INFORMAL SPEED AND COMPREHENSION TEST SCORES
 EXPERIMENTAL GROUP
 (N=24)

Tests	Mean		S.D.		S.E.M.		Diff.	S.E.D.	r	t-value	Confidence Level
	Initial	Final	Initial	Final	Initial	Final					
Wide Range Vocabulary	61.83	66.58	5.65	5.31	1.17	1.10	4.75	.82	.76	5.78	.001
Informal Comprehension (Percentage)	67.50	80.20	11.87	11.67	2.48	2.43	12.70	1.63	.55	7.76	.001
Informal Speed (wpm)	198.79	250.17	33.41	39.09	6.97	8.16	51.31	6.34	.66	8.50	.001

TABLE 9

COMPARISON OF MEANS OF INITIAL AND FINAL WIDE RANGE VOCABULARY TEST SCORES,
 INFORMAL SPEED AND COMPREHENSION TEST SCORES
 CONTROL GROUP
 (N=24)

Tests	Mean		S.D.		S.E.M.		Diff.	S.E.D.	r	t-value	Confidence Level
	Initial	Final	Initial	Final	Initial	Final					
Wide Range Vocabulary	65.33	69.79	7.37	7.61	1.54	1.58	4.46	1.38	.60	3.23	.01
Informal Comprehension (Percentage)	65.60	73.95	13.80	12.50	2.88	2.60	8.35	2.27	.66	3.68	.01
Informal Speed (wpm)	250.25	258.71	94.73	97.39	19.77	20.33	8.46	8.04	.92	1.05	Insig.

198.79 words per minute at the beginning and 250.17 words per minute at the close of the study. The control group had a lower initial comprehension mean of 65.6% and concluded with a mean of 73.95%. Its initial speed was 250.25 words per minute with a final rate of 258.71 words per minute.

In summary, as evidenced in final test scores, two of the major objectives of this study were answered. It would seem that both of the approaches promote improvement in general reading achievement equally well. Neither group had a statistically significant gain over the other. The second question asked, concerning the comparison of specific areas, may be answered as follows. The control group made greater gains in rate and vocabulary on the Gates Reading Survey, whereas the experimental group gained in comprehension over the control group on that test. On the Wide Range Vocabulary Test the experimental group showed higher gains. The informal appraisal indicated that the experimental group showed greater gains in both comprehension and speed.

The final question - the effect of the two programs on student interest in and attitude towards reading - was not pursued.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

The major purpose of this investigation was to evaluate the effect of a filmstrip reading program on the reading improvement of secondary level students. Improvement in the specific abilities of rate, vocabulary, comprehension, in addition to general reading achievement, were considered.

A total of forty-eight students, all but two of them freshmen, at Nicolet Union District High School participated in the study for a period of six weeks. Equivalent groups were formed on the basis of C.A., I.Q., and average reading scores. The experimental factor was a commercially prepared filmstrip series, "Tachist-O-Filmstrips". The teacher of the experimental group followed the filmstrip manual for daily lesson plans. The instructor of the control group followed a teacher-oriented program of reading instruction, using daily lessons and selected materials planned by the writer. Effects of the experimental factor were measured by mean scores obtained on the Gates Reading Survey, the Wide Range Vocabulary Test, and an informal appraisal of speed and comprehension.

Appropriate statistical procedures and t-tests of significance of differences between mean test scores were employed. Because of the small sample involved, the reasonableness of the null hypothesis was tested on the basis of standard probability value.

Conclusions and Implications

Analysis of the data obtained leads to the following conclusions within the limitations of this study.

Experimental vs. Control Group. - There was no significant difference between the experimental and the control groups at the end of the six-week period in total average general reading achievement, but the control group's progress was greater.

Experimental Group. - The experiment contributed evidence that the use of the commercially prepared filmstrip program, "Tachist-O-Filmstrips" was of value in the improvement of reading comprehension at the secondary level as measured by the Gates sub-test. The gains differed significantly from those made by the control group. According to results measured on the Wide Range Vocabulary Test, the filmstrip program increased general range and knowledge of word meanings to a greater extent than did the program carried out by the control group.

Control Group. - In reading rate the control group showed marked superiority on the Gates Reading Survey. The vocabulary sub-test on the Gates also showed greater gains for the control group, but the difference between the mean gains made by the control and the experimental group were not statistically significant.

General Implications. - In studying the above data, the following implications for education seem to be suggested.

1. In terms of teacher-effort and preparation, the filmstrip program might be considered more economical since the material is "packaged" and ready to be presented on a

ment's notice. The question of whether it is sufficiently differentiated was not explored since the same films were presented to all classes. However, there is no reason why films could not be selected to meet individual differences and varying ability levels.

2. A variation of the control group's program might have yielded better results if there had been more integration of vocabulary, comprehension, and speed training rather than the compartmentalized arrangement planned in this study, and greater differentiation of material and approaches to meet individual needs.
3. The literature cited indicated that many authorities hope that the teacher may become more involved on an individual basis with students if greater use of visual aids is employed in the classroom.⁶⁸ If so, might there be more transfer of positive attitudes and values?

Suggestions for Further Research

1. Due to the fact that longer time is needed to change habits of thinking and patterns of perception, a study extending the time element would perhaps show more marked results.
2. A study of the effect of transfer of learning due to

⁶⁸Supra, chap. 2, p. 19.

filmstrip training would be of value. Normal reading is continuous, contextual, and "non-rhythmic" in the sense that the reader adapts his rate as purpose for reading or difficulty of material changes. Filmstrip reading, particularly tachistoscopic reading, is almost the opposite. It is rhythmic phraseology, wherein the reader is encouraged to read in uniform elements or thought units. Does this develop an inflexible attack? This could be answered by a comparative study of the effect of the two approaches on study-reading in the content areas.

3. A study of the effect of using a filmstrip program extensively on the role of the teacher would be a less tangible but useful research. Will values and attitudes transfer to the student's benefit, and, conversely, will students be affected adversely as the teacher becomes more involved with the individual student as her need for classroom preparation decreases? Will this inter-action of teacher-pupil strengthen student attitudes toward and interest in reading?

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APPENDIX A**TABULATION OF TEST SCORES****COPIES OF TESTS**

INITIAL TEST SCORES - EXPERIMENTAL GROUP

Pupil No.	C.A. (months)	L.T. I.Q.	Gates Speed	Reading Vocab.	Survey Comp.	- I Total	Wide Range Vocab.	Informal WPM Speed	% of Comp.
1	180	110	9.9	10.4	9.5	9.9	59	186	65
2	182	116	9.9	11.0	7.4	9.4	67	239	65
3	178	111	9.9	9.6	7.4	9.0	62	202	70
4	173	120	8.6	10.4	7.9	9.0	67	171	50
5	173	120	9.1	10.4	8.2	9.2	58	186	80
6	186	114	7.4	7.4	8.2	7.7	55	167	45
7	176	118	9.1	10.8	7.2	9.0	65	140	75
8	174	120	7.8	7.0	6.9	7.2	57	190	55
9	183	128	11.3	12.2	11.1	11.5	74	171	70
10	177	106	11.7	11.4	9.5	10.9	68	215	75
11	179	137	9.1	8.0	6.9	8.0	57	210	80
12	176	130	10.6	11.3	12.0	11.3	70	254	65
13	172	132	9.9	10.3	12.5	10.9	55	254	65
14	182	119	8.6	10.4	10.1	9.7	72	198	55
15	170	116	8.6	9.6	7.4	8.5	58	198	75
16	171	117	9.1	10.9	6.5	8.8	59	280	45
17	177	108	6.3	10.3	5.6	7.4	53	225	70
18	174	114	7.8	7.4	7.4	7.4	60	210	75
19	174	120	9.1	10.9	7.6	9.2	64	202	80
20	171	120	10.6	11.2	9.1	10.3	61	210	55
21	175	111	7.4	8.8	8.2	8.2	57	175	70
22	182	109	7.8	10.8	7.9	8.8	56	174	60
23	181	122	8.6	11.9	10.6	10.4	66	162	90
24	176	126	11.3	11.0	10.6	11.0	64	152	85

INITIAL TEST SCORES - CONTROL GROUP

Pupil No.	C.A. (months)	L.T. I.Q.	Gates Reading Survey - I				Wide Range Vocab.	Informal WPM	% of Comp.
			Speed	Vocab.	Comp.	Total		Speed	Comp.
1	177	110	11.0	10.7	9.1	10.2	71	235	70
2	179	116	8.2	10.7	9.5	9.4	68	254	75
3	185	110	8.8	9.6	9.2	9.2	68	245	60
4	171	120	7.1	11.0	9.1	9.1	61	225	80
5	172	122	8.6	10.7	9.1	9.4	68	239	80
6	177	113	7.6	7.6	7.6	7.6	71	299	80
7	182	118	8.2	11.9	6.9	9.0	74	309	75
8	172	120	7.8	7.2	5.8	7.0	68	260	65
9	177	120	12.3	12.0	10.3	11.5	78	650	80
10	179	109	12.0	10.8	10.6	11.1	70	235	80
11	171	130	8.6	9.6	6.5	8.2	59	180	50
12	174	130	11.3	11.9	10.6	11.2	66	253	65
13	178	131	12.0	10.9	9.5	10.8	63	267	80
14	178	119	8.6	11.2	8.6	9.5	66	235	70
15	176	116	7.4	10.3	8.2	8.7	71	253	65
16	181	116	7.8	11.7	7.9	9.1	71	194	75
17	177	108	6.3	8.0	6.2	6.8	40	133	35
18	178	114	6.1	10.7	5.4	7.4	59	280	45
19	176	120	10.6	8.5	8.2	9.1	55	190	60
20	169	120	11.0	8.8	11.1	10.3	62	183	55
21	177	115	6.8	9.6	8.2	8.2	61	139	50
22	189	108	8.6	8.8	8.2	8.5	65	210	70
23	178	122	11.5	10.0	10.3	10.3	65	303	35
24	177	128	11.3	11.1	10.6	11.0	68	235	75

FINAL TEST SCORES - EXPERIMENTAL GROUP

Pupil No.	Gates Reading Survey - II			Wide Range Vocab.	Informal		
	Speed	Vocab.	Comp.		WPM Speed	% of Comp.	
1	11.4	11.0	10.3	10.9	67	240	80
2	12.3	11.4	9.5	11.1	70	289	80
3	11.3	11.5	10.6	11.1	66	235	90
4	7.8	11.2	9.5	9.5	69	238	75
5	9.9	11.2	10.6	10.6	66	238	85
6	7.6	10.3	8.2	8.7	61	198	60
7	11.3	11.2	10.3	10.9	69	240	85
8	11.5	10.8	10.1	10.8	67	235	70
9	11.4	12.0	12.0	11.8	75	274	95
10	12.2	11.5	10.3	11.3	70	314	90
11	12.1	8.0	6.9	9.3	64	314	90
12	12.3	12.0	12.5	12.3	71	302	90
13	9.9	10.7	10.1	10.2	65	280	75
14	8.8	10.9	12.5	10.7	74	293	70
15	11.7	10.0	10.3	10.7	61	293	85
16	11.4	10.8	7.4	9.5	65	293	70
17	7.4	8.5	5.8	7.2	53	250	45
18	9.1	10.8	10.1	10.0	69	238	75
19	11.4	11.2	10.6	11.1	68	215	95
20	11.7	11.2	9.5	10.8	68	240	90
21	7.8	8.8	8.4	8.3	61	198	75
22	11.0	10.4	8.2	9.9	61	200	75
23	9.0	12.0	11.2	10.7	71	210	90
24	12.3	11.7	11.1	11.7	67	177	90

FINAL TEST SCORES - CONTROL GROUP

Pupil No.	Gates Speed	Reading Vocab.	Survey Comp.	- II Total	Wide Range Vocab.	Informal WPM Speed	% of Comp.
1	11.6	10.9	7.9	10.1	73	250	80
2	11.3	10.4	11.1	10.9	70	215	75
3	11.4	11.4	9.1	10.6	69	250	65
4	11.6	10.9	9.1	10.5	64	208	90
5	11.6	11.2	9.1	10.6	74	275	85
6	12.3	11.3	12.0	11.9	74	390	90
7	11.3	11.0	9.1	10.5	76	238	75
8	9.9	9.6	8.2	9.2	69	270	75
9	12.2	12.0	12.0	12.1	80	660	85
10	12.2	11.9	12.0	12.0	78	254	70
11	11.6	9.2	7.9	9.6	58	138	55
12	12.0	12.2	11.5	11.9	71	256	95
13	12.3	11.4	10.3	11.3	68	270	85
14	12.0	10.9	10.3	11.1	67	274	85
15	11.5	11.0	9.5	10.7	74	255	65
16	12.2	11.5	9.5	11.0	78	200	75
17	7.8	9.6	6.5	8.0	62	150	55
18	7.8	10.3	6.9	8.3	65	263	50
19	11.7	8.2	8.2	9.4	60	195	65
20	11.5	10.7	6.2	9.5	68	276	55
21	11.6	10.4	9.5	10.5	64	200	65
22	11.5	11.0	10.6	11.0	68	184	75
23	12.3	10.3	12.0	11.5	73	263	80
24	11.7	11.7	12.5	12.0	72	275	85

WIDE RANGE VOCABULARY TEST

C. R. ATWELL and F. L. WELLS

Form B

NAME..... DATE.....

BIRTHDATE..... GROUP.....

- | | |
|------------------------------|---|
| 1. A saucer is a | table spoon hat eat dish |
| 2. Jelly is eaten on | bread potatoes cabbage soup lobsters |
| 3. To learn is to | jump give fall know wake |
| 4. Men are | dogs statues women people monkeys |
| 5. The stomach is for | eating fighting hunting success exercise |
| 6. If we are merry we are | sad married happy drunk naughty |
| 7. To step is to | ride fall stop write walk |
| 8. We fry | cookies eggs coffee people flowers |
| 9. To be furious is to be | angry gentle pretty silly noisy |
| 10. A spade is used to | insult dig rake carry win |
| 11. Flutter refers to | wings drinking singing feet teeth |
| 12. Like means | same different lady new candy |
| 13. Bran comes from | fish peaches wheat bananas liver |
| 14. Wealth is | bananas strength happiness presents riches |
| 15. A scholar is a | fool pendant book student birch |
| 16. To agree is to | argue consent flavor love upset |
| 17. A warrant is served by a | cafeteria preacher restaurant salesman policeman |
| 18. A major is an | artist officer auditor orator igloo |
| 19. To preserve is to | save water fish brown boil |
| 20. A cave is a | rock lake coat hole porch |
| 21. Many means | several mica coins less some |
| 22. Spinal pertains to | fish collar-bone architecture backbone disease |
| 23. To fidget is to | scream squirm forget mend rest |
| 24. To recognize is to | talk overlook know ignore seem |
| 25. Transact refers to | business bridges street-cars theaters churches |
| 26. To achieve is to | deceive ravage acknowledge pass accomplish |
| 27. To rumple is to | sit iron dance wrinkle ride |
| 28. To take is to | send please carry lose give |
| 29. A zone is an | acre estate era area antiseptic |
| 30. A far country is | away near beautiful strange rich |
| 31. Rickets is a kind of | medicine disease furniture game food |
| 32. Temperature refers to | electricity dampness pressure heat sunshine |
| 33. A couch is a | cold porch bed chair lie |
| 34. A ladle is a | star crib dipper canoe lady |
| 35. A seafarer is a | captain ship bird reprobate sailor |
| 36. To resume is to | stop continue start consider smoke |
| 37. Unfruitful means | unproductive frosted bitter unfaithful green |
| 38. To forewarn is to | forearm forbear forget forgive foretell |
| 39. To whirl is to | eat laugh buzz wiggle cut |
| 40. Immune means | exposed vast diseased inundated protected |
| 41. To seclude is to | travel suspect withdraw linger mistrust |
| 42. Rations refer to | food logic soldiers banks countries |
| 43. A coiffure is a | negligee headdress drink bracelet box |
| 44. To be ruthless is to be | pitiful punishing competitive pitiless aggressive |
| 45. A denial is a | refusal proposal declamation cock confirmation |

46. A **lathe** is a kind of
47. **Straddle** refers to
48. **Inquisition** means
49. To **relapse** is to
50. A **kingdom** is a
51. To **recruit** is to
52. A **leer** is a kind of
53. To make a **pun** is to
54. To **coil** is to
55. A **Calyx** is a term in
56. To **rejuvenate** is to make
57. To **foil** is to
58. A **clubfoot** is a kind of
59. A **bilge** belongs to a
60. A **flagstone** is used for a
61. To **shroud** is to
62. To be **lenient** is to be
63. To **rile** is to
64. To **assent** is to
65. A **dilemma** is a
66. **Infallible** means without
67. A **zigzag** path is
68. **Harum-scarum** means
69. An **azalea** is a kind of
70. One may **incur**
71. To **administer** is to
72. To **exemplify** is to
73. **Manifold** means
74. To **dupe** is to
75. A **chalice** is a kind of
76. A **sot** is
77. To **indict** is to
78. **Presentiment** means
79. **Avidity** means
80. **Adjutant** means
81. **Anterior** refers to
82. A **wench** is a
83. **Malachite** is a kind of
84. To **venture** is to
85. A **guise** is a
86. A **tetrasyllable** is a
87. To **inter** means to
88. A **nuncio** is a
89. A **micrometer** measures
90. **Corvine** means like a
91. A **mendicant** is a
92. **Prodigal** is
93. A **privilege** is a
94. A **minster** is a
95. **Phthisis** is a term in
96. An **ibex** is a kind of
97. A **canard** is a
98. **Pensile** means
99. A **spiracle** is for
100. **Eglantine** is a kind of
- bath building onion machine clock
babies fighting position money leather
punishment war pogrom riot investigation
climb recover backslide stop bend
monastery country palace capitol fish
discount retreat enlist march fight
dance beckoning vegetable payment look
laugh rhyme joke fasten kick
ravel strike wave pin wind
physics chemistry orthopedics botany agronomy
young happy beautiful silly blonde
arrest prevent avoid flavor squeal
gadder plant society deformity animal
wheelbarrow automobile ship tree fish
pole weapon sundial tracing pavement
bury shiver shape cover worry
heavy tolerant languorous lithe dependent
laugh consider anger draw envy
dissent climb trust fortify agree
problem horn controversy digression contradiction
religion error permission science legality
narrow rough up-and-down back-and-forth roundabout
ambiguous Mohammedan elfish flighty frightened
moss fish insect flower chiffon
speed measles spinach people debt
squander manage substitute judge partake
enlarge exonerate illustrate distrust placate
many duplicate multiform few simple
poison dress deceive demolish clean
plate collar cup knight quest
bald neat shiftless stubborn insane
charge prosecute arrest acquit sentence
foreboding gift official emotion chastisement
greediness dampness dryness hatred honesty
bookkeeper officer marine initiation society
back side front right left
man witch girl nut tool
mineral disease race lumber cave
risk have explore conquer tease
feature semblance volcano masquerade posture
phrase sentence ruler word quadruped
debate bury embalm question undertake
popo traveler monastery foreigner messenger
space sound intelligence strength heat
cow hawk crow eagle cat
tailor friar minstrel beggar druggist
wasteful masculine thrifty wandering favored
kitchen right letter crime favor
bachelor lady helper lobby church
metallurgy astronomy physics psychology medicine
bird goat fish jewel plant
vegetable steamer hoax newspaper fish
hanging thoughtful written criminal worthless
climbing breathing drawing decoration antisepsis
lily rose violet columbine daisy

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LEE'S GREATEST VICTORY

Out of the farmhouse parlor at Appomattox General Robert Edward Lee walked erect and unflinching. He had just surrendered the remnant of his army and accepted total defeat. Now, as he stood at the top of the steps on Palm Sunday, 1865, he saw only the wrecked hopes and fortunes of the Confederate States. The south wind brought him not the perfume of pinesaps in the woods, where his men were encamped, but the stench of war and the unheard anguish of its orphans and widows.

Under the crushing double burden of defeat and responsibility, Lee descended the steps of the McClean farmhouse as Traveler, his faithful gray, was led to meet him. When he had swung into the saddle, he saw that General Grant had come out upon the steps. The two men raised their hats, one to the other, in silence; all that lay between them had been said.

As Lee rode back to his lines, the men in gray crowded up to him, read the truth in his careworn face. His voice broke as he told the weeping veterans that all was over. Go home, he advised them, plant a crop, obey the laws.

Robert E. Lee had surrendered only his military forces; he had not yielded the fate of the South to despair. There was war over, and with it must go all its hatred, pride, and anger. From "General Orders No. 9" the farewell address to his army prepared for him, he struck out a paragraph which he feared might fan the embers, so thoroughly deleting it that we no longer know what were the inflammatory words. Then, and for the rest of his life, he refused to revive the issues that had died with all the men who had died for them.

By the surrender terms, Lee's men were free to find their way to their homes- if standing- to weed-high fields and hungry children. But not till the last Confederate soldier had started on his weary march homeward did the greatest of them turn Traveller toward Richmond through all the troubling sweetness of a Virginia spring. So much had he loved Virginia that for her sake he had turned against the Union. He who hated slavery and had freed his slaves, who considered secession as bald revolution had yet thought of Virginia first and defended her to the last. He could not, he had explained simply, draw his sword against his birth-place. Virginia itself was a cause, Blue Ridge and Shenandoah, Piedmont and Tidewater- names like haunting notes of music, notes to make a chord, chords that make a melody. For he had fought, taking her sons with him. But when General Lee unbuckled his sword in his Richmond house, he made peace in his heart and set his face toward the future, dark as it was.

Edmund Ruffin, the rabid secessionist who proudly fired the first shot against Fort Sumter from Morris Island, blew his brains out when the Confederacy fell. Other Virginians left the state, to become morose and useless expatriates abroad.... But Lee declared, "Now more than at any time Virginia and every other state in the South needs us."

His status was the same as that of tens of thousands who had followed him- a paroled prisoner of war. But when President Johnson extended a general amnesty to the former Confederates, it expressly excluded Lee. The privilege was offered him, however, to make special application for pardon. Gravely Lee considered this. So to bow to authority would be to set an example for millions of Southerners who might think it right to keep alive a spirit of resistance. But at this moment a movement was started to indict Robert E. Lee and other Confederates for treason against the United States.

Lee hesitated. To ask for pardon now might seem to flinch before a trial. He took his problem straight to his old adversary General Grant, who replied that, as a prisoner honoring his parole, General Lee could not be indicted for treason. So, Lee fearless even of humiliation, applied for pardon. For this, bitter die-hards were to pursue his memory beyond the grave with reproaches. But untold numbers of Southerners reasoned that, if their idolized leader could return in sincere loyalty to the Union, they could follow him in peace as they had in war. No victory that Grant ever won brought back to the Union so many brave and loyal hearts as this act of Lee's.

Lee had reason to feel one with the veterans whom war had stripped. His beautiful home at Arlington had been confiscated by the Government for taxes, its furnishings looted by civilians. With his invalid wife and several daughters, he was living in a cottage that had been put at his disposal by a generous friend. Kindly offers of help were many. One English nobleman invited him to be a guest his life long. "I cannot desert my native state," Lee answered, "in the hour of her adversity."

Bitterly his daughter Mary said that the South would give her father anything- except what he wanted most, the chance to earn his living. This remark, reached the ears of the trustees of a forlorn little institution in Lexington, Va. Washington College had always been small, though with a history dating back, under various names to 1749. War's end found it looted of library and laboratory equipment, with many of its buildings dilapidated, others garrisoned by Federal troops, and only forty-five students and four professors on the roster. The logical thing might have been to close the doors. Instead, the trustees voted to struggle on, borrowed money to repair buildings and pay salaries, and, without his knowledge, elected to the presidency of the college the noblest living American.

All they could offer Robert E. Lee was \$1,500 a year and a house to live in when one could be got ready. But Lee saw more in the offer than the small opportunity for himself. To him the gravest loss of the South, after the lives of her soldiers, was her cultural and moral values. For four years her finest young men had been deprived of higher education; the country was filled with veterans trained only to fight. Teaching them, he might teach the defeated Confederacy the hard lessons to be learned. Friends pointed out that he could easily find a place in a more famous institution. Lee shook his head; to rebuild from ruins was the task of all his people. So it was that through the blazing heat of September, 1865, Lee headed westward on Traveller for Lexington.

Washington and Lee, as the College now proudly calls itself, has grown since Traveller's rider first saw it. The very name of Lee brought to it an immediate increase in enrollment, from 45 to 400. Of these many were bearded veterans, some determined to make up for time lost in war, some war-hardened, hard-drinking, spoiling to start trouble with

the Federal garrison, the newly liberated Negroes, and the carpet-baggers. General Lee, the West Pointer, faced them with a high standard; "We have but one rule here, and that is that every student must be a gentleman."

To emphasize that he was training men not as fighters but as workers, Lee deliberately walked out of step with the band whenever his students marched with those of the neighboring Virginia Military Institute. He abolished formal inspections and punishments, and instituted instead an honor system. It included unswerving attendance at classes, the highest personal morals, courtesy, unflagging respect for property, and submission to civil authority. Above all, Lee's honor system meant hard work, for almost every boy in college, he knew, was there at extreme personal sacrifice by some war-impooverished family. Work and save. So he preached, and so he practiced.

Though president, he had to be his own secretary, his own superintendent of buildings and grounds. He, who hated paper work and had kept five secretaries busy in the army, toiled alone in his bleak little office in the basement of the chapel, answering all the college correspondence, acting too as an employment bureau for the students. He personally supervised the construction and maintenance work. Nothing roused the old president's ire like waste. Every rail from a tumbled-down fence must be saved, every scrap of paper used over and over. Except on ceremonial occasions, the president dressed in threadbare clothes, perhaps because so many of his students could dress no other way.

Nor must the South merely salvage what she could; she must prepare for new opportunities. Washington College had specialized formerly in Latin, Greek rhetoric and mathematics-training for an ante bellum life of leisure. Those days were gone. So, as fast as funds became available, Lee added courses in civil engineering, agricultural chemistry, modern languages.

Handsome offers came to Lee personally. He might perhaps have been president of the Chesapeake and Ohio Railway. He could certainly have received \$10,000 a year in the Knickerbocker Insurance Company, with only the lightest of duties required of him. But Lee would not desert his "boys."

The South today is filled with monuments to Lee the soldier; one marks his resting place, in the crypt of the old college chapel, where he was laid on October 14, 1870. But his greatest monument is invisible. It is the example he set not only the South in his day but the whole country for all time, of a Christian soldier who went onward, in faith, humility, courage and justice, in times more bitter and disheartening than war itself. "We failed," he said of the lost cause, "but in the good providence of God apparent failure often proves a blessing. It is history that teaches us to hope."

LEE'S GREATEST VICTORY

How well did you read?

_____ W.P.M.

_____ % Comprehension

Answer the question that follow.

There are twenty statements to be completed correctly by using one of the four phrases marked a,b,c, and d. Read the statement carefully and with out referring to the selection just read, choose the correct phrase to make the statement true. After you have completed answering the questions, correct your answers. Skim through the selection to check those questions you missed. Give yourself five points for each correct answer.

1. The date of the opening of this story is:
 - (a) December, 1864
 - b. Palm Sunday, 1865
 - c. Easter Sunday, 1865
 - d. Thanksgiving, 1865
2. As Lee stood in the doorway, the south wind brought him:
 - a. the perfume of pinesaps.
 - b. the smell of rain.
 - c. the stench of war.
 - d. the odor of fresh cut grass.
3. Lee's faithful horse was called:
 - a. Travester
 - b. Dapple-gray
 - c. Traveller.
 - d. Old Smokey.
4. As Lee swung into his saddle he saw:
 - a. McLean.
 - b. weeping veterans.
 - c. his daughter.
 - d. General Grant
5. Lee advised his soldiers to:
 - a. continue fighting
 - b. go home and plant crops
 - c. march on to Richmond
 - d. disregard the new laws.
6. By the surrender terms, Lee's men were:
 - a. free to find their way to their homes
 - b. to return to their last encampment
 - c. to leave Virginia soil.
 - d. to keep their slaves.
7. Lee's feeling toward slavery was one of:
 - a. tolerance.
 - b. hate.
 - c. understanding
 - d. consideration.
8. Edmund Ruffin, the rabid secessionists:
 - a. committed suicide
 - b. refused to leave Lee.
 - c. accepted Grant's terms.
 - d. became Lee's personal servant.
9. After the war, Lee's status was the of:
 - a. a free man.
 - b. a paroled prisoner of war.
 - c. a prisoner of war.
 - d. military leader.
10. Lee's application for pardon:
 - a. was considered.
 - b. brought about much disloyalty in the South.
 - c. brought many loyal men back to the Union.
 - d. destroyed men's faith in him.

11. When an English nobleman invited Lee to come to live with him, Lee said:
- a. he would do so for a few years.
 - b. he could not desert his native state.
 - c. he would give it consideration.
12. At the end of the war, Washington College had:
- a. only forty-five students.
 - b. seventy-five students.
 - c. one hundred students.
 - d. one hundred and twenty-five students.
13. As president of the college, Lee received a house to live in and:
- a. \$1,200 a year.
 - b. \$1,500 a year.
 - c. \$1,750 a year.
 - d. \$2,000 a year.
14. Lee told his students that the one rule was:
- a. hard work.
 - b. to become rehabilitated.
 - c. to be gentlemen.
 - d. to be good soldiers.
15. As president Lee:
- a. had his own secretary.
 - b. had five secretaries.
 - c. had a superintendent of buildings.
 - d. was his own secretary.
16. The thing that roused Lee's ire most was:
- a. laziness.
 - b. waste.
 - c. cutting classes.
 - d. untidiness.
17. Washington College had formerly specialized in:
- a. military training.
 - b. agriculture.
 - c. Latin, Greek, rhetoric.
 - d. modern languages.
18. Lee might have been president of:
- a. Harvard University.
 - b. an industrial firm in New York.
 - c. a shipping concern in Virginia.
 - d. the Chesapeake and Ohio Railroad.
19. Lee's resting place is:
- a. the crypt of the old college chapel.
 - b. Arlington Cemetery.
 - c. Richmond.
 - d. Washington, D.C.
20. Lee's greatest monument is:
- a. in Richmond.
 - b. in Lexington.
 - c. invisible.
 - d. Washington and Lee University.

Is this fact or opinion? _____

The main idea of this selection is _____

The supporting details are _____

APPENDIX B**SAMPLES OF LESSON PLANS USED****EXPERIMENTAL GROUP**

TACHIST-O-FILMSTRIPS
SUGGESTED SIX-WEEK PROGRAM

Week	Monday	Tuesday	Wednesday	Thursday	Friday
First	SSG-1 WMB-1	PHMB-1 RDA-1	*Free	SSG-2 WMB-2	PHMB-2 RDA-2
Second	SSG-3 WMB-3	PHMB-3 RDA-3**	*Free	SSG-4 WMB-4	PHMB-4 RDA-4
Third	SSG-5 WMB-5	PHMB-5 RDA-5	***Ve- cabulary	SSG-6 WMB-6	PHMB-6 RDA-6
Fourth	SSG-7 WMB-7	PHMB-7 RDA-7	Building	SSG-8 WMB-8	PHMB-8 RDA-8
Fifth	SSG-9 WMB-9	PHMB-9 RDA-9	or	SSG-10 WMB-10	PHMB-10 RDA-10
Sixth	SSG-11 WMB-11	PHMB-11 RDA-11	Review	SSG-12 WMB-12	PHMB-12 RDA-12

Notes:

All filmstrip series numbers or symbols explained on following page.

* Free reading or review may be transferred to Friday, and the Thursday-Friday unit moved up to Wednesday-Thursday, if this is more compatible with school schedule.

**Students may be directed to construct their answers to RDA in a limited number of words, such as "25 words or less," or "15 words or less," beginning with RDA-3.

*** For additional vocabulary development, the Prefix-Suffix Mastery series may be employed during the free period on Wednesday.

Lesson 2 Tachisto-O-Filmstrips requires approximately thirty class minutes to view.

TACHIST-O-FILMSTRIPS SETS USED

The symbols or abbreviations used in the six-week suggested lesson plan shown on the previous page are as follows:

- SSG** - Seeing Skills Tachist-O-Filmstrips (Set G) - A set of twelve films utilizing symbols of various kinds; numbers - starting with smaller numbers and increasing to larger ones; code groups composed of letters, numbers, symbols.
- WMB** - Vocabulary Tachist-O-Filmstrips, Word Mastery (Set B) - A set of twelve filmstrips developed from the most commonly used words in grades 7, 8, and 9. After the flashing of the words, all of the words were listed with a number following each word. This number indicated the number of words which could be derived from the base word. Students were directed to list the words derived from the base word, determine the definition of the word if they did not know it, and use the word in a sentence.
- PHMB** - Phrase Mastery Tachist-O-Filmstrips (Set B) - A set of twelve filmstrips in which phrases were developed from the basic words presented in the WMB. This was one presentation or one form of using the word from the filmstrip in context. Students were directed to use the word in another phrase or the phrase in another sentence.
- RDA** - Reading Mastery and Development Tachist-O-Filmstrips (Set A) - A set of twelve filmstrips composed of paragraphs about the importance of reading and the various skills and techniques which were commonly used in reading. The paragraphs were divided into phrases, and the phrases were flashed on the screen. After each of the three paragraphs, the students were asked a key question - to give the main idea, or to summarize the ideas presented.

* The purpose of the filmstrips in SSG was to assist the student in noting similarities and differences and to remember the series of symbols, letters, numbers, and/or code groups long enough to write them down.

TEACHING READING WITH THE INSTANT WORDS

By Edward Bernard Fry, Ph. D. ¹



Self-correction provides immediate knowledge of results, permits teacher to help individual students.

Whether it be in the regular classroom, in small groups, or in a clinical or tutorial situation involving individual instruction, the Instant Words are an ideal beginning vocabulary--regardless of the basic ability or educational achievement of the student.

Two criteria in developing the Instant Words were:

1. Include the most frequently used words to achieve the greatest flexibility in reading.
2. Avoid easily recognized variants (like, likes, liked) and nouns of restricted use (Thanksgiving, Washington).

Two standards used in achieving this were:

1. Scientific word counts of millions of words, including those of Thorndike-Lorge, Rinsland, Fau-

cett, Horn, Fitzgerald and Dolch.

2. Personal experience as a remedial teacher, plus subjective logic i.e. the scientific word counts include in the first 500 words all the numbers "one" through "ten" except "nine". "Nine" was arbitrarily added. "Babyish" sounding words (daddy) were omitted in deference to high school remedial readers.

BASIC. Because they encompass from 58 to 77% of the words encountered in all current primary reading, the Instant Words provide a logical, practical approach to the teaching of reading. The student sees these words in everything he reads. The Instant Words are even further organized for his benefit; the FIRST words taught are the MOST used words--the ones he will deal with most often. He can, in effect, pick up anything he chooses to read--and five out of every ten words will be from the first set of Instant Words, since they are 50% of most reading.

This high percentage of encounterability makes the Instant Words important to either the beginning reader or the delayed reader. The teacher can employ them with any age or ability group with confidence that **THESE ARE THE WORDS THE STUDENT MUST KNOW IF HE IS TO READ.** He must recognize them instantly for any degree of fluency. They may be used at all grade levels for the fundamental teaching of reading. Upper grade students are usually drilled on the Instant Word Phrases.

CORRECTIVE-REMEDIAL. Slow readers at upper grade levels often need training in the instantaneous recognition of this important basic vocabulary. Since the Instant Words comprise so much of what he must read, it is important that the student have no hesitation in recognizing and using them.

DIAGNOSTIC. The teacher can quickly determine at what level the student should begin by an analysis of the errors he makes on the Instant Words because they are graded according to need.

Most of the first one hundred should be recognized instantly by students completing

1. Author of the Instant Words, Professor of Education at Rutgers, the State University, New Brunswick, New Jersey. Dr. Fry was formerly director of the Reading Clinic at Loyola University at Los Angeles and has taught the elementary grades, the mentally retarded, and classes in reading at the secondary level as well as college and industrial reading.

the first grade of school; the second hundred known thoroughly by the end of the second year. Practically all the first 300 Instant Words should be mastered during the third grade.

The fourth, fifth, and sixth hundred should be recognized instantly by fourth grade students but are excellent review for all upper elementary reading levels.

If a student cannot recognize the words in the second hundred, he will have trouble in reading a second reader, etc. Therefore, the Instant Words may be employed as a check of basic reading grade level.

To be sure, the student will learn other words than these. He will, however, be unable to read with understanding, and with the ease he should, unless he knows the Instant Words for his level--regardless of how many other words he may know.

CORRELATION--Instant Words to Instant Word Phrases. The Instant Word Phrases provide practice in reading and writing the Instant Words in meaningful phrases. They are correlated with the Instant Word Tachist-O-Filmstrips; each Instant Word Phrase Tachist-O-Filmstrip of a given number uses every word from the Instant Word Tachist-O-Filmstrip of the same number at least three times. The Instant Word Phrases may be used along with the Instant Words, or following them.

UTILIZATION. Experience has shown that the Tachist-O-Flash approach is a most effective way of teaching the Instant Words. In the Reading Clinic at Loyola we have had success even with reputedly "hopeless cases" by having them read from filmstrips projected on the screen. Flashing the word for the student to write, then correcting at once, gives what psychologists call "knowledge of results", a very effective tool in learning and motivation. In addition, other learning principles involved in the process are: (1) "learning set", i. e., paying attention to the right thing; (2) multi-sensory approach i. e., the use of eyes, ears, speech, fingers, with their corresponding areas of the brain; (3) learning small units which increases the frequency of the rewarding effect of knowledge of results, and (4) the sheer novelty of the use of the screen, which is unlike other reading experiences.

MULTIPLE EXPERIENCES. An advantage of the Tachist-O-Filmstrip technique with the Instant Words is the aforementioned multi-sensory approach. The student has one experience when the word is flashed and he recognizes it, a second experience when he says it, a third when he writes it down, a fourth when he sees the corrections and a fifth when he compares it to his own response. Thus, the student encounters each word five times in each of the three groups in the Instant Word Phrases Tachist-O-Filmstrips, which means that he has fifteen experiences with each word during the lesson.

Many teachers use the corresponding Instant Word and Instant Word Phrases Tachist-O-Filmstrip in a single lesson to provide a total of twenty experiences with the words being presented. Multiple presentations can be very effective in developing instantaneous recognition of these important words.

PHRASE READING. Seldom in living reading experiences do children meet words in isolation--rather they appear more frequently in phrases and larger contextual situations. The Instant Word Phrases Tachist-O-Filmstrips help establish these more mature patterns of reading.

Tachistoscopic presentation of phrases can be effective in breaking up immature word-by-word reading, teaching the student to see several words at one time, in units of thought.

It is expected that the use of Instant Word and Phrase Tachist-O-Filmstrips will be at all times accompanied by ample reading experience in books.

CONCLUSION. The keen interest students exhibit in Tachist-O-Flashed lessons creates a situation that is conducive to levels of attention and concentration which the student may never before have achieved. This high order of concentration results in greater accuracy, and noticeably increases student self-confidence. The alert attitude toward, and obvious anticipation of each Tachist-O-Flashed word or phrase creates a pattern for the proper mind set in reading from their books. Teachers observe that students who learn their basic vocabulary via Instant Words Tachist-O-Filmstrips become attentive, interested readers.

HOW TO USE YOUR TACHIST-O-FLASHER

One of the principle reasons for employing tachistoscopic techniques in teaching is to assure attention and concentration. If a student sees an image exposed tachistoscopically, and can learn to respond correctly to that image, he is paying a high order of attention, and is concentrating effectively. Through proper choice of subject matter in the appropriate Tachist-O-Filmstrips the student may improve in reading, spelling, arithmetic, and other subjects while developing attention, concentration, and perceptual skills. The Tachist-O-Flasher is ideal for this purpose.

The Tachist-O-Flasher is an inexpensive tachistoscopic attachment for use with Tachist-O-Filmstrips and any regular filmstrip projector. This combination provides a superb tachistoscope for individual, small group, or classroom use. Illustrated instructions on the face of the Tachist-O-Flasher are a guide to its proper operation.

Tachist-O-Flash Concept

The Tachist-O-Flasher is designed to be used for tachistoscopic teaching in conjunction with Tachist-O-Filmstrips. In determining desirable exposure speeds for this purpose, it was observed that exposures faster than $1/50$ of a second may cause undue apprehension in some students. For this reason $1/50$ second has been termed the "frustration threshold". The Tachist-O-Flasher is limited to a top speed of $1/40$ of a second to eliminate inadvertent frustration through over-enthusiastic operation.

Another reason for selection of $1/40$ of a second is that persistence of vision--the physiological phenomenon which makes motion pictures and television possible--causes an image to remain in the mind for approximately $1/16$ of a second regardless of the brevity of the exposure. Apparently the only effect of exposures shorter than $1/40$ of a second is the reduction of the effective brilliance of the image, making it more difficult to see. For instructional purposes, there appear to be no psychological, physiological or educational reasons for faster exposures. There are at least two compelling reasons for limiting them to $1/40$ -- the elimination of frustration and greater visibility.

Setting Up

Thread the Tachist-O-Filmstrip into the filmstrip projector and focus the image from the projector on the screen, chalkboard, or other target area on which the picture is to be shown. The image should be located slightly below the center of the target area. Lift the front of the filmstrip projector, and slide the Tachist-O-Flasher base under the front feet of the projector until the Tachist-O-Flasher mechanism is about a half inch from the projector lens. To adjust the Tachist-O-Flasher vertically, loosen the two wingnuts on the base and raise or lower the mechanism until the light from the projector lens passes through the open aperture. If necessary, readjust the projector tilt mechanism to bring the image to the desired location on the screen. (Continued)

Operation--Exposure Speeds

Two controls are used in operating the Tachist-O-Flasher. The "Hold Open" control has two wings. The top wing, when pressed into the Tachist-O-Flasher mechanism, opens the aperture for time exposures, and to permit focusing, questions, answers, discussion, etc. Pressing in the bottom wing closes the aperture, and sets the Tachist-O-Flasher for rapid exposures.

The "Operating Lever" controls rapid exposures. Pushing straight down gently on the lever with the thumb or forefinger provides an exposure of approximately 1/20 of a second. Pressing down quickly results in an exposure of approximately 1/40 of a second. Longer exposures may be achieved by pressing more slowly.

The operating lever is self-setting. Release it completely at the bottom of each stroke and it will return at once to starting position. This makes it possible to employ rapid-sequence exposures for reading retention-comprehension-rate training.

Teachers generally turn the film advance knob on the filmstrip projector with one hand and operate the Tachist-O-Flasher with the other, working from the right-hand side of the projector. The wingnuts and bolts may be removed from the base and turned around, placing the operating levers on the left side for those who prefer to work from behind the projector and wish to turn the film advance knob with the right hand while operating the Tachist-O-Flasher with their left.

Dependability and Flexibility

The Tachist-O-Flasher is so ruggedly constructed students can be permitted to work with it. When a student operates the filmstrip projector and Tachist-O-Flasher, the teacher is free to observe. This also allows independent self-instruction, or small group activities in the classroom or clinic. Small filmstrip projectors are available which make multiple Tachist-O-Flasher installations in classrooms and clinic inexpensive and effective.

Individual Tachist-O-Flashers have been operated in excess of 500,000 flashes and are still in daily use. Endurance tests indicate that they should have an operating life in excess of 2,000,000 exposures. This is equivalent to thirty teachers giving an average Tachist-O-Filmstrip lesson every school day for a period of ten years.

The ease of operation, flexibility, durability, and low cost of the Tachist-O-Flasher make it practical for individual, small group, or total class participation in this extremely valuable educational technique.

CONSULT THE INSTRUCTIONS ON THE TACHIST-O-FILMSTRIP BOX, THE INDEX INSIDE THE LID OF THE BOX, AND DIRECTIONS TO THE TEACHER CONTAINED AT THE START OF EACH TACHIST-O-FILMSTRIP FOR SPECIFIC PROCEDURES.

APPENDIX C

SAMPLES OF LESSON PLANS USED

CONTROL GROUP

LESSON PLAN CALENDAR - SECOND SIX WEEKS' SESSION

Date	Subject
March 22	Steps in Vocabulary Growth
March 23	Context Clues
March 24	<u>Test - Word Meaning Approach</u>
March 25	<u>Prefix pre-test. Begin Structural Analysis</u>
March 26	Board Work - prefixes
March 27	Prefixes
March 29	Analogous Relationships
March 30	Suffixes
March 31	Complete suffixes. <u>Quiz on Prefixes Studied</u>
April 1	Stems
April 2	Stems
April 5	<u>Quiz on Borrowed Stems</u>
April 6	Roots
April 7	Roots. <u>Test on Affixes and Roots</u>
April 8	Dictionary Skills
April 9	<u>Comprehension Pre-Skills Test</u>
April 12	Listening Comprehension
April 13	Comprehending Sentence Meaning
April 14	Comprehending Paragraph Meaning
April 15	Paragraph Keys - Kinds of Paragraphs
Easter Vacation	
April 26	Principles of Outlining: Classifying
April 27	Phrasing Topics
April 28	Reading with Full Signals; Half Signals
April 29	Reading and Outlining without Signals
April 30	Outlining
May 3	Noting Sub-Subtopics
May 4	How to Take Examinations
May 5	Standardized Testing
May 6	Standardized Testing
May 7	Conferences - Recording Information

Note: This calendar was followed in all three of the six-week sessions with whatever slight variations circumstances required. The first three weeks were devoted to vocabulary skills; the final three to comprehension skills.

LESSON PLAN #6 - March 29, 1965

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1. Discuss worksheet errors on previously assigned worksheet. Re-teach any misunderstood concepts.
 2. Review negative prefixes and basic understandings of prefix and root study. Dictate words, p. 122 from Reading Skills and have students insert proper negative prefix in front of correct word. Correct and discuss in class.
 3. Discuss concept of analogy - kinds of relationships between words. Put following examples on board and have students decide inductively the kind of relationship:

(Synonym)	Answer: reply = frighten: _____(scare)
(Whole/Part)	Hand: finger = paw: _____(claw)
(Antonym)	Strong: weak = tiny: _____(huge)
(Degree of intensity)	Cold: cool = pink: _____(rosy)
(Purpose of action)	Fight: win = search: _____(discover)
(Classification)	Butterfly: insect = donkary: _____(beast)
(Characteristic)	Nail: straight = hook: _____(bent)
(Tense)	Bite: bit = drink: _____(drank)
(Numerical ratio)	Inch: foot = one: _____(twelve)

4. Discuss analogy page worksheet (Ditto master duplications from Reading-Thinking Skills) orally stressing relationship of the two boxed items. Then have class do independently. Also, complete analogies using words from study listed in prefix study, if time permits.

Perceiving Relationships (Analogies)

Read each sentence. Think how the words in the boxes are related. Find a word in the WORD BOX that will be related to the underlined word in the same way. There are more words in the WORD BOX than you will need. Write the one that fits best.

1. **Dull** is to **polished** as **compact** is to _____
2. **Excitable** is to **nervous** as **crafty** is to _____
3. **Utensil** is to **griddle** as **gait** is to _____
4. **Stream** is to **ford** as **gear** is to _____
5. **Hush** is to **silence** as **shut** is to _____
6. **Sorrow** is to **sympathy** as **doubt** is to _____
7. **Hint** is to **clue** as **concentrate** is to _____
8. **Filly** is to **colt** as **dam** is to _____
9. **Pat** is to **pelt** as **sip** is to _____
10. **Hardware** is to **hinge** as **vehicle** is to _____
11. **Shred** is to **strip** as **strain** is to _____
12. **Cap** is to **visor** as **watch** is to _____
13. **Stable** is to **oats** as **ambulance** is to _____
14. **Plot** is to **farm** as **shower** is to _____
15. **Thicket** is to **forest** as **tack** is to _____
16. **Inquiry** is to **retort** as **amateur** is to _____
17. **Dazed** is to **bewildered** as **positively** is to _____
18. **Grasp** is to **clench** as **surprise** is to _____
19. **Shoulders** are to **withers** as **hips** are to _____
20. **Imitate** is to **mimic** as **unite** is to _____
21. **Scowl** is to **expression** as **series** is to _____
22. **Chip** is to **splinter** as **sleep** is to _____

WORD BOX

sledge	link	figures	clutch	litter
stun	crystal	filter	torrent	gulp
expert	briskly	arrangement	wily	pace
focus	spike	absolutely	sire	haunches
drowse	sprawling	slam	joints	suspicion

LESSON PLAN #8 - March 31, 1965

1. Test on prefixes and suffixes studied.
2. Begin instruction on borrowed stems. Relate how a knowledge of prefix and suffix clues are helpful when you know the root word as in unchangeableness. Then, show how in word unpredictableness you would be left with dict. It isn't a word at all, but just a part of a word, a stem, borrowed from latin "dictus" meaning "to say or tell". By knowing the meaning of dict, you can solve the meaning of other words containing the same stem: prediction, dictate, contradict, etc.

Develop meanings for following stems: (p. 186 - Reading Skills)

vert or vers: turn or change	flue: flow
pend or pens: hang	pels or puls: drive
rapt: break	ceed, ced, ces: go
tort: twist	duct or due: lead, take

Elicit meanings from students of following words on board:

(vert)	revert introvert reversible subversion controversy	(flu)	fluid influx superfluous
(pend)	depend pending pendant	(pels)	expel repulse repel compel
(rapt)	disrupt interrupt rupture eruption	(ced)	intercede proceed recede concede exceed recession procession
(tort)	distortion torture contortion extortion	(duct)	reduction conduct abduct induct deduct educate

3. Give completion sheets to class for practice in using above stems.

PRACTICE IN USING LATIN STEMS (March 29 worksheet)

Use a word based on the following stems in the sentences below.

vert or vers: turn or change
pend or pens: hang

rapt: break
tort: twist

1. John took us for a ride in his new _____.
2. The _____ of Mt. Vesuvius sent hot lava rushing downhill.
3. This morning Mary wore a silve _____ around her neck.
4. The clown went through so many _____ he made us laugh.
5. Because the ski jacket was _____, it would be worn inside out.
6. Harold was an _____, more interest in others than in himself.
7. No one is happy if he is too _____ on other people.
8. So long as the case was _____ in court, no settlement could be made.
9. The M.C. _____ the program to make an important announcement.
10. Everyone was glad when the judge _____ his decision.
11. Before they could get Paul to the hospital, his appendix _____!
12. The enemy used torture to _____ a confession from their captive.
13. The musical program was _____ when a baby in the audience cried.
14. Because the _____ of the clock was off balance, it was inaccurate in keeping time.
15. When a person is on a diet, he must be careful not to _____ to his old habits of eating too much.

flue: flow

Pel or puls: drive

ceed, cede, or ces: go

duct or duc: lead or take

1. When the experiment failed, the scientist followed a different _____.
2. It is unlawful to _____ the speed limit posted along the road.
3. The man charged an _____ price for repairing the watch.
4. Jet _____ planes streaked through the sky at unbelievable speed.
5. The small child was _____ from his home by a kidnapper.

QUIZ ON BORROWED STEMS (April 6)

Beside the number of each word, write the letter that stands for the group of words most nearly explaining the meaning of that word, according to its Latin stem and prefix.

- ___ 1. revert
a. change back
b. hang over
c. break open
- ___ 2. independent
a. hanging upon
b. not hanging upon
c. not changing
- ___ 3. disrupt
a. twist back
b. break apart
c. not break
- ___ 4. extortion
a. the act of breaking into
b. the act of twisting before
c. the act of twisting out of
- ___ 5. introvert
a. turned within
b. hanging inside
c. turned without
- ___ 6. pendant
a. something twisted
b. something broken
c. something hanging
- ___ 7. extrovert
a. turned outward
b. turned inward
c. twisted back
- ___ 8. interrupt
a. hang between
b. turn within
c. break between
- ___ 9. reversible
a. able to be twisted again
b. able to be turned back
c. not breakable
- ___ 10. torture
a. act of breaking
b. act of twisting
c. act of changing

p. 2 - Quiz on Borrowed Stems (continued)

The Latin stem that forms each part of the words in Column A has been underlined. In Column B are the meanings of these Latin stems. Beside the number of each word in Column A, write the letter that stands for the meaning of the underlined Latin stem in that word.

<u>Column A</u>		<u>Column B</u>
___1. ded <u>uct</u> ion	___11. ex <u>ceed</u>	a. flow
___2. prop <u>el</u>	___12. in <u>flux</u>	b. drive
___3. rec <u>ede</u>	___13. pro <u>ceed</u>	c. go
___4. disp <u>el</u>	___14. super <u>fluous</u>	d. lead or take
___5. con <u>duct</u>	___15. ded <u>uct</u>	
___6. con <u>cede</u>	___16. inter <u>cede</u>	
___7. ab <u>duct</u>	___17. exp <u>el</u>	
___8. rep <u>ulse</u>	___18. ed <u>ucate</u>	
___9. recess <u>ion</u>	___19. in <u>duct</u>	
___10. <u>fluid</u>	___20. pro <u>cession</u>	

Beside the number of each word in Column A write the letter that stands for the explanation in Column B that matches that word.

<u>Column A</u>	<u>Column B</u>
___1. ridicule	a. without end
___2. portable	b. laugh at
___3. biography	c. to carry into
___4. manuscript	d. a piece of writing about the life of someone
___5. inscription	e. something written afterward
___6. infinite	f. by hand
___7. reporter	g. able to be carried
___8. postscript	h. something written upon
___9. import	i. person who carries back
___10. manual	j. something written by hand

p. 3 - Quiz on Borrowed Stems (continued)

Beside the number of each word, write the letter that stands for the word or group of words most nearly explaining the meaning of that word according to its Latin stem and prefix and/or suffix.

- ___1. retrospect
 - a. trust again
 - b. look back
 - c. see around

- ___2. revive
 - a. make live again
 - b. see again
 - c. hear twice

- ___3. dictation
 - a. the act of looking
 - b. the act of seeing
 - c. the act of telling

- ___4. invisible
 - a. not able to live long
 - b. not able to be heard
 - c. not able to be seen

- ___5. incredible
 - a. not able to be believed
 - b. not able to be said
 - c. not able to be looked at

- ___6. vivid
 - a. seen
 - b. alive
 - c. told

- ___8. inspect
 - a. look upon
 - b. not believe
 - c. hear again

- ___9. audiometer
 - a. instrument for measuring sight
 - b. instrument for measuring speech
 - c. instrument for measuring hearing

- ___10. creditor
 - a. a person who looks
 - b. a person who hears
 - c. a person who trusts

p. 4 - Quiz on Borrowed Stems (continued)

A Greek or Latin stem has been underlined in each of the words in Column A. In Column B are the meanings of these Greek or Latin stems. Beside the number of each word in Column A, write the letter that stands for the meaning of the underlined Greek or Latin stem in that word.

<u>Column A</u>		<u>Column B</u>
___ 1. <u>micro</u> phone ___ 2. <u>gratit</u> ude ___ 3. <u>translu</u> cent ___ 4. <u>tele</u> viser ___ 5. <u>mal</u> content ___ 6. <u>auto</u> graph ___ 7. <u>phon</u> ics ___ 8. <u>forti</u> fy ___ 9. <u>auto</u> mat ___ 10. <u>tele</u> phone	___ 11. <u>mal</u> icious ___ 12. <u>ungrac</u> ious ___ 13. <u>lumin</u> ous ___ 14. <u>forti</u> tude ___ 15. <u>auto</u> mobile ___ 16. <u>mal</u> adjusted ___ 17. <u>fort</u> ress ___ 18. <u>tele</u> graph ___ 19. <u>grati</u> fy ___ 20. <u>mal</u> ignant	a. light b. strong c. sound d. self e. bad or evil f. far or far from g. pleasing or thankful

LESSON PLAN #21 - April 26, 1965 - Principles of Outlining

1. Introduction to subject: use analogy of crossword puzzle and fun involved in solving it. Compare to solving the puzzle of poor performance in a car and how we go about arriving at a solution a real-life puzzle. In one case you do not know what to do; in the other case, you do not know what to think. In assembling a car you must decide what parts go together. In assembling a plan of thought, you must decide what facts and ideas go together. One puzzle is solved just like the other - you observe shapes, sizes, relationships. You know the likenesses and differences, kinds and qualities, and relationships among facts.
2. Discuss basis of thinking and studying: discrimination. Point out all ideas are not equally important, and how only vital factors go into an outline - main ideas and subtopics.
3. Discuss structure of the outline: review idea of indenting to show relationship. Illustrate idea of subordinate relationship on board:

Arrange the following terms in the form of an outline: Poetry, American poetry, New England poetry, Longfellow's poetry, Hiawatha

Class response: I. Poetry

A. American poetry

1. New England poetry

a. Longfellow's poetry

1) Hiawatha

Point out: None of these is equal in value to any of the other. Each is subordinate to the one before it.

4. Discuss idea of co-ordinate relationships by writing the following on the board and have students arrange:

Drama

Poetry

Italian poetry

French poetry

English poetry

American poetry

Midwestern poetry

New England poetry

Whittier

Longfellow

Hiawatha

Tales of a Wayside Inn

King Robert of Sicily

Paul Revere's Ride

Southern poetry

Sidney Lanier

Frank L. Stanton

Discuss which are subordinate and which are coordinate.

Lesson Plan #21 - Principles of Outlining - page 2 (continued)

5. Point out to the class that it's easy to recognize relationships when the terms are presented in their correct order...but one is often forced to arrange and rearrange topics to get a true picture of the thought. For this reason, practice in thinking out relationships from disarranged items are of great value.
6. Discuss the major types of outlines. Point out that if students make themselves at home with these three types, they will acquire enough skill to master almost any textbook they will need in school work. A glance through the table of contents will indicate the general type of plan. As soon as you decide which of the three kinds of outline the book fits into, you can know what to expect.

List on Board and elicit from students topics which would fit in:

Type A: Time Orders

Chronological: i.e., battles of Revolution War, American presidents, history of the word, etc.

Mechanical: i.e., how to drive a car, how to vote, etc.

Type B: Logical Orders

Time plays no part. But importance does. i.e., the importance of nursing, the differences between insects, kinds of grain, qualities of a leader, causes of crime, habits of butterflies, needs of modern athletics. Essay, science articles, sermons, debates, sales talks, advertising are examples where outlines follow logical orders.

Type C: Arbitrary Orders

Based on certain immediate requirements. Place order: theme on wild animals of the world, garden cities of America, etc. Size order: as in classifying types of fishing boats or domestic animals. Or alphabetical or numerical listings.

7. Give worksheets for outline completion from Reading-Thinking Skills

Name _____

Factural content: 1 - 6 - 13 - 14 - 20 - 27 - 38 - 39

Central thought: 5 - 31 - 32 - 33 - 34 - 35

Inferences: 3 - 9 - 10 - 11 - 12 - 15 - 16 - 17 - 18 - 19 - 21 - 24
- 25 - 26 - 28 - 29 - 30

Context meaning: 2 - 4 - 22 - 23

Tone and Style: 7 - 8 - 36 - 37 - 40

Analyzing Your Reading Skills

The purpose of this test is to help you find what reading skills you need to develop.

Directions: Read each selection carefully. Then in the space provided, write the letter of the word or phrase that best completes each item based upon the selection. You may go back to the passage as many times as you wish. This is not a speed or a memory test.

Selection I.

THE BROTHERS

They're both dead now. They were brothers. One was a painter and the other a doctor.

The painter was convinced that he had genius. He was arrogant, irascible and vain. He despised his brother as a philistine and a sentimentalist. But he had earned practically nothing and would have starved except for the money his brother gave him.

The strange thing was that, though bearish and uncouth in manner and appearance, he painted pretty-pretty pictures. Now and then he managed to have an exhibition and always sold a couple of canvasses. Never more.

At last the doctor grew conscious of the fact that his brother was not a genius after all, but only a second-rate painter. It was hard for him after all the sacrifices he had made. He kept his discovery to himself. When he died, he left all to his brother.

The painter found in the doctor's house all the pictures he had sold to unknown buyers for twenty-five years. At first he couldn't understand. After thinking it over, he hit upon the explanation; the cunning fellow wished to make a good investment.

1. The passage indicates that the artist was _____.
A. acclaimed B. Not acclaimed C. merely second-rate
2. "Uncouth" (in line 7) means most nearly _____.
A. outlandish B. hideous C. attractive and poised.
3. The doctor acquired the paintings _____.
A. for sentimental reasons B. for an investment C. because he thought his brother was a genius.
4. "Philistine" (in line 4) means most nearly _____.
A. a native of another country. B. a person who is clumsy in manner
C. a person who has little time for people of artistic interests.

5. The author the apinter as "arrogant and vain". The story _____

- A. does not subatantiate that opinion. B. does substantiate that opinion C. leaves one in doubt.

Selection II

MONT BLANC

At last the day had arrived for our trip into the majestice French Alps to view Mont Blanc. It was a dismal day and the air was thick with heavy fog which pressed hard upon the spirits of our small group as we silently filed into the station. After the ususal language difficulties, which suspiciously allowed us time to purchase souvenirs, we were ushered into the misty morning toward a concrete loading platform. There a single cable car was swinging slowly in the chill air.

The bright red car had glass on all sides and even on top, enabling us to see the large pulleys and dark, oily cables. It had no benches, so it was "standing room only" as each of our group of fourteen travelers pushed his way into the swaying car.

The clang of the heavy door was still ringing in our ears as the car gave a heave and began its pull up the mountain. It was a steady, rocking chair ride which provided a slight thrill at each cable post. Here the car would slowly rise as it approcahed the crossbar, pause, and then sag downward in the slack of cable toward the next pole.

After several thousand feet we broke into clear sky, leaving beneath us the dense fog that clung to the foot of the mountain. Far out on the valley floor the sun and shadow made a paint-pot of color with greens, yellows, and browns interrupted by small patches of lakes. Beyond the valley another mountain range rose abruptly, its greens and browns a darker, almost violet hue where a broad, blue-white glacier split the mountain.

We climbed higher and higher, noisily pointing out various views when suddenly we entered the fog again. It was as if a train had entered a long, dark tunnel.

There was nothing to see, nothing to say, and nothing to do. We waited silently for the car to pass through the fog to the clear sky above. We waited while droplets of water formed on the windows and the only sound was the dull creaking of the pulley above us. The silence was almost screaming when, suddenly, the air was clear and pure, deep-blue sky surrounded us. High above us loomed the glistening white dome of Mont Blanc.

6. The passage indicates that _____.

- A. the passengers spoke French fluently B. language difficulties occurred at the station. C. the travellers were not tourists

7. To appreciate the description the reader _____.
- A. must use several senses. B. must have been there himself
C. must be a world traveller.
8. In the fourth paragraph the expressions "paint-pot of color" and "patches of lakes" are _____.
- A. similies B. metaphors C. paradoxes
9. This trip took place probably during _____.
- A. summer B. winter C. spring or fall

Selection III

Tim's Corner

Tim was practically a normal boy. At twelve, Tim felt slightly neglected but not rejected.

An injured leg kept him apart from the crowd. Not exactly apart, but always a hesitant shuffle behind.

The youngest of five children, he was used to it. He was served last at the table; he was last in the bathroom; he was last into the car and last out. He was last to grow up to a used bicycle or to grow into an old suit.

When the gang was out riding, Tim's rusted, patched-up bicycle could'nt keep up. When they walked, Tim's ill concealed handicap kept him to the rear. He didn't complain; he apparently didn't mind. He just couldn't catch up.

Then school. Tim's eyes gleamed with pride when he won his white belt and the post at Water and Vine as a school safety patrol member. An automobile had played a bitter part in the drama of his young life, but Tim didn't say, "Look what an automobile did to me, do you want the same thing to happen to you?" Instead he said, "I'll watch the automobiles. You watch me."

People, both schoolmates and older folks, listened and obeyed as Tim commanded respect with his directions. His good nature made street crossing a pleasure. Tim was a landmark. The sign "Water and Vine", was still high on the pole, but the corner had lost its identity. Tim was walking taller than that sign these days. This was now "Tim's Corner."

A stranger looking for the Post Office was told to go to Tim's Corner and turn left. The railroad station was a block to his right.

Yes, this was Tim's Corner and he was always last to leave. He was used to being last. He liked it that way.

10. The story suggests that Tim's family _____.
- A. gave him special consideration as a handicapped member
B. neglected and rejected him C. gave him the usual "youngest member" treatment.
11. The author influences the reader to feel _____ for Tim.
- A. Sympathy and admiration B. pity C. grudging respect
12. Tim's attitude towards his handicap was _____.
- A. resentment B. bitterness C. to ignore it
13. The author describes Tim as _____.
- A. immature B. irascible C. uncomplaining
14. The author tells the story in _____.
- A. chronological B. mixed time order
15. Tim's injury resulted in _____.
- A. a permanent disability B. a temporary disability
C. no disability

Selection IV

A proverb is a short saying that has been used for many years to teach a lesson. The same lesson may be taught by two or more proverbs.

16. The proverb, "Do not judge a book by its cover" means the same as:
- A. "look before you leap" B. "One man's meat is another
C. "All that glitters is not gold"
17. The proverb, "Birds of a feather flock together" means the same as:
- A. "A man is known by the company he keeps" B. "An empty vessel makes the most noise"
C. "Few are the friends of adversity"

Selection V

A White Blanket

That first night on the trail, Buck faced the great problem of sleeping. The tent, illumined by a candle, glowed warmly in the midst of the white plain. When he, as a matter of course, entered it, both men bombarded him with cooking utensils, till he recovered from his fear and fled into the outer cold.

A chill wind was blowing that hipped him sharply and bit into his wounded shoulder. Buck lay down on the snow and attempted to sleep, but the frost soon drove hi, shivering to his feet.

Miserable and disconsolate, he wandered about among the tents, only to find that one place was as cold as another. Here and there savage dogs rushed upon him, but he bristled his neck-hair and snarled (for he was learning fast) and they let him go his way unmolested.

Finally an idea came to him. He would return and see how his own teammates were making out. To his astonishment, they had disappeared. Again he wandered about through the camp, looking for them, and again he returned. Were they in the tent? No, that could not be, else he would not have been driven out.

Then where could they possibly be? With drooping tail and shivering body, very forlorn indeed, he aimlessly circled the tent. Suddenly the snow gave way beneath his fore legs and he sank down. Something wriggled under his feet. He sprang back, bristling and snarling, fearful of the unseen and the unknown.

But a friendly little yelp reassured him, and he went back to investigate. A whiff of warm air ascended to his nostrils, and there, curled up under the snow in a snug ball, lay Billie.

He whined, squirmed and wriggled to show his good will and intentions, and even ventured, as a bribe for peace, to lick Buck's face with his warm, wet tongue.

Another lesson. So that was the way they did it, eh? Buck confidently selected a spot, and with much fuss and waste of effort proceeded to dig a hole for himself.

In a trice the heat from his body filled the confined space and he was asleep. The day had been long and arduous, and he slept soundly and comfortable, though he growled and barked and wrestled with bad dreams.

The waking camp roused him. At first he did not know where he was. A new fall of snow had completely buried him. A great surge of fear swept through him- the fear of the wild thing for the trap.

The muscles of his whole body quivered instinctively, the hair on his neck and shoulders stood on end, and with a ferocious snarl he bounded straight up into the blinding day, the snow flying about him in a flashing cloud.

Ere he landed on his feet, he saw the white camp spread out before him and knew where he was. He remembered, too, all that had passed from the time he had gone for a stroll until he had dug a hole for himself the night before.

18. The passage indicates that Buck _____.

- A. Was a newcomer to this frigid climate.
- B. Was used to cold
- C. had been a member of the dog team for a long time.

19. The passage implies that Buck _____
- A. Was accustomed to trail practices B. was a vicious animal
C. had formerly been a house pet.
20. The men accompanying the dog team _____.
- A. lived on cold food B. did not live on cold food
B. had no cooking utensils with them
21. Buck experienced many different feelings and emotions throughout the night. The author describes chiefly his _____.
- A. antagonism B. bewilderment C. confidences
22. "Bombarded" in paragraph 1 means most nearly _____.
- A. they casually tossed utensils B. they threw bombs at him
C. they vigorously threw cooking utensils at him

Selection VI.

A Genuine Mexican Plug

How these picturesque Mexicans and Americans rode! Leaning just gently forward out of the perpendicular, easy and nonchalant, with broad slouch hat, brim blown square up in front, they swept through the town like the wind! I had quickly learned to tell a horse from a cow, and was eager to learn more. I resolved to buy a horse.

While the thought was rankling in my mind, the auctioneer came scurrying through the plaza on a black beast that had as many bumps as a dromedary. "Horse, saddle, and bridle at twenty two dollars, gentlemen!" and I could hardly resist.

A man whom I did not know (he turned out to be the auctioneer's brother) noticed the wistful look in my eye, and observed that that was a very remarkable horse to be going at such a price. He added that the saddle alone was worth the money. I said I had half a notion to bid.

Then he said, "I know that horse- know him well. You are a stranger I take it, and so you might think he is an American horse, but I assure you he is not. He is nothing of the kind; but excuse my speaking in a low voice, other people being near-- he is, without the shadow of a doubt, a genuine Mexican Plug."

I did not know what a Genuine Mexican Plug was, but there was something about this man's way of saying it, that made me swear inwardly that I'd own a Genuine Mexican Plug or die.

"Going, going, going at twenty four dollars and a half, gen...."

"Twenty seven " I shouted in a frenzy.

"And sold!" said the auctioneer, and passed over the Genuine Mexican Plug to me.

In the afternoon I brought the creature into the plaza and certain citizens held him by the head and others by the tail while I mounted him. As soon as they let go, he placed all his feet in a bunch together, lowered his back, and then suddenly arched it upward, and shot me straight into the air, a matter of three or four feet.

I came as straight down again. lit in the saddle, went instantly up again, came down almost on the high pommel, shot up again, and came down on the horses's neck----all in the space of three or four seconds.

Then he rose and stood almost straight up on his hind feet, and I clasped his lean neck desperately, trying to hold on. While I was up, somebody struck the horse a sound thwack with a leather strap, and when I arrived again the Genuine Mexican Plug was not there.

A youth chased and caught him, and asked if he might have a ride. I granted him that luxury. He mounted, got lifted into the air once, but sent his spurs home as he descended, and the horse darted away like a telegram. He soared over three fences like a bird, and disappeared down the road toward the next valley.

An elderly bystander said, "Stranger, you've been taken in. Everyone knows that horse. Any child could have told you that he'd buck. He is a simon-pure, out and out. Genuine Mexican Pug, and an uncommon mean one at that!"

I gave no sign; but I made up my mind that if the auctioneer's brother funeral took place while I was in the Territory, I would postpone all other recreations and attend it.

23. In paragraph 8 "pommel" means most nearly _____.
- A. the back of a horse B. a sword C. the knob on the top of a Western type saddle.
24. The horse was _____ at a true auction since the auctioneer closed the sale after the storyteller's bid.
- A. sold B. not sold
25. The auctioneer's brother was dishonest although he spoke truthfully because _____.
- A. He said the saddle was worth \$22 advantage of an inexperienced person. B. he realized he was taking like "remarkable" and "plug" C. he used expressions
26. The storyteller was imprudent because _____.
- A. He gave no sign that he resented being duped. B. He hoped to attend the auctioneer's brother's funeral C. He was rash in buying the horse without advice.

27. The passage indicates that the storyteller had never lived on a farm because _____.
- A. He was learning to distinguish between a horse and a cow
 - B. He was bucked by the horse
 - c. He did not know what a genuine Mexican Plug was.
28. This story is humorous if you _____.
- A. realize that the storyteller was "taken in" by his own natives
 - B. like auctions
 - C. like stories about horses.

Selection VII

"I'm a smash hit" boasted a conceited actor to his dinner host. "Why yesterday by the time the last act ended, I had the audience glued in their seats!"

"Wonderful!" exclaimed the host, "Clever of you to think of it!"

29. The correct interpretation of this article is _____.
- A. The host was showing genuine admiration for the actor.
 - B. All actors are boasters.
 - C. The sarcastic answer put a conceited actor in his place.

Selection VIII

Arriving in San Francisco for an appearance on an airshow, Groucho Marx headed for North Beach first thing. "I remember a restaurant from about 10 years ago where they served the most wonderful 65¢ dinner" he explained.

A couple of hours later he was back. "I found the place" he said to Bing Crosby. "And you know what. They're still serving that same 65¢ dinner only now they charge \$3.50 for it!"

30. The correct interpretation of this article is _____.
- A. Inflation increases prices but not quality.
 - B. \$3.50 is a lot to charge for a hamburger plate.
 - C. The author is saying that Groucho is tight-fisted with money.

Selection IX

If you doubt your sanity, you are probably sane. If you are absolutely certain of your sanity, there may be reason to doubt it. So goes unproven theory concerning mental illness.

Authorities claim that if everyone who suffers from mental illness were to be hospitalized, every hospital bed in the United States would be occupied (700,000). One can see that with such a great number of people suffering from mental illness, it takes on the proportions of a major disease.

Years ago, people suffering from mental illness were thought to be inhabited with evil spirits. These people were beaten, thrown out of society and sometimes killed by superstitious citizens. As society began to attempt to solve the problem of mental illness, it was decided that these people should be placed in institutions. They were to be separated from society. But nothing was done to help cure the illness. No distinctions were made between the mildly ill and the violent. Consequently, often more harm than good was done.

However, mainly through the efforts of people like Dorothea Dix, society became aware of the harm being done to these ill people. As a result, scientific study and treatment of mental illness has greatly advanced. People are realizing that mental illness is nothing to be ashamed of any more than a physical illness. Many people, having been victims of mental illness, have recovered and are presently living normal and useful lives. They are living examples of what can be done by proper care of mental illness.

31. The main idea of this article is that _____.

- A. Mental illness is to be greatly feared.
- B. It has taken a long time for mental illness to be recognized as a real disease.
- C. The author, a mental patient, is telling his experiences.

32. Paragraph one means that _____.

- A. All normal people are odd in various ways, enough so as to make them doubt their sanity, occasionally.
- B. Mentally unbalanced people feel that everyone is odd but themselves.
- C. There are more insane people than we think.

33. In paragraph two the author is _____.

- A. Saying that there are more mentally ill people that we can take care of properly.
- B. Trying to have more hospitals built.
- C. Emphasizing the extent of the illness.

34. In paragraph three _____.

- A. The author tells humorous stories of mental patients.
- B. The reader notes that treatment of mental illness has been a long time developing to its present stage.
- C. The author tells the reader that he can be thankful he isn't mentally ill.

35. In paragraph four _____.
- A. The author is trying to make Dorothes Dix a big heroine.
 - B. One notes that present day treatment of mental illness developed because it has been recognized as a disease that can respond to treatment.
 - C. We see how the staff of a large hospital operates.
36. The writer's style is _____.
- A. abrupt and jerky
 - B. rather humorous
 - C. somewhat technical
37. To write the passage the author needed chiefly _____.
- A. facts
 - B. lively imagination
 - C. skill in analyzing ideas
38. According to the writer, the basic reasons why it has taken so long for mental illness to be recognized as a disease are because _____.
- A. People were ashamed of mental illness, superstitions and ignorant
 - B. There aren't enough hospitals
 - C. There are more mentally ill people than we can take of
39. Many people who have suffered mental illness _____.
- A. recover and lead normal useful lives
 - B. try to frighten others
 - C. feel that everyone is odd but themselves
40. The passage indicates that the writer is _____.
- A. sure that he is right
 - B. open-minded and impartial
 - C. cautious in expressing himself