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EFFECTS OF A SPECIFIC DEVELOPMENTAL READING PROGRAM UPON
THE PROGRESS IN READING OF SEVENTH GRADE STUDENTS
OF MORGAN HIGH SCHOOL

by

Raymond P. Larson

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

of

MASTER OF SCIENCE

in

School Administration

UTAH STATE UNIVERSITY
Logan, Utah

1960

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INTRODUCTION

Our civilization depends in great measure on the reading process and there is a need for attaining greater skill in reading. Being able to read well has become one criteria for measuring the extent of a person's education. Every year seems to increase the reading demands made upon students as well as adults. Reading was one of the three R's that made up the curriculum of the early schools in our country. Reach (1955) states that in our society all children are not only privileged, but most of them are required to spend many years in school, and the curriculum is so organized that it is absolutely essential that all students read intelligently and effectively if they are to succeed in academic work. In our modern civilization the major responsibility for teaching reading seems to have been given to the elementary schools. Programs with the aim of increasing reading skills and ability have been carried on continually in these schools. Reading texts and professional books have been published and revisions made almost continuously to help with this task.

Real need for follow-up in secondary schools

However, as important as reading is in the lives of people very little has been done to continue this program and to try and improve reading skills on the secondary and college level. Strang (1940) says that not many years ago there was slight interest in the improvement of reading in any strata of education beyond that represented by the elementary school.

Reading was considered to be an elementary school subject, and it was assumed that high school and college students had acquired the requisite reading skills to meet the successive academic demands made upon them.

The answer does not lie in insisting that they remain, regardless of their ages, in the elementary school until they meet standards. The answer is one the high school itself must provide. (Gray, 1955, p. 201)

A trend to extend training

In recent years there has been a definite change in this situation. There is more and more evidence that the responsibility of helping students improve their ability and skill in reading continues through secondary school and college. A national committee studying the current need for reading at the high school and college level reached the following conclusions:

The development of capacity to interpret critically and with discrimination at the more mature levels of reading is a primary responsibility of high schools and colleges. The belief prevails that if this goal could be achieved during the next generation, American life would be profoundly affected for the better. (California State Committee, 1948, p. 3)

Numerous teachers and administrators are asking what can be done to improve the reading ability of students in the secondary schools. Robison and Dramer (1958) stated that their survey revealed an increasing awareness by administrators and teachers of the role of reading in the high school program. The importance of this problem is more evident when we examine the amount of silent reading required in a typical high school program. Strang (1940) states that eighty to ninety

percent of all studies the students have are silent reading. She further states that success in many courses depends in a large measure upon the students ability to comprehend the required readings in a reasonable length of time.

More reading being taught in secondary schools.

In response to this demand there have been many programs developed on the secondary school level to achieve this goal and to improve the reading ability of the students in schools. There are many different kinds of programs being used. The main objectives of some programs is the improvement of the reading ability of all the students while other programs are remedial programs for the retarded readers.

Are these programs successful? Do they help improve reading ability? Are they worthwhile in our educational systems? These are some of the questions that need to be answered if possible. It appears that a great deal of study needs to be made of programs that purport to improve ability to read.

Purpose of study

In this experiment the Science Research Association Laboratory (hereafter referred to as S.R.A.) reading program is used. It is an attempt to determine whether it does have value in improving the student's ability to read.

REVIEW OF LITERATURE

The teaching of reading is a very complex and basic problem. Everyone today needs to be able to read and to read well in order to have an understanding of the world in which we live. Consequently there is a voluminous amount of articles and books written on the subject of reading. It is not the purpose of this review to cover all of the areas in the field of reading. Rather it is confined to general principles and programs which assist in improving ability to read and particularly programs which pertain to the secondary schools.

Need for improving reading

In discussing the reasons for continually striving to improve reading ability N. B. Smith (1955, p. 142) says,

Now changes are taking place and it is time for us to take stock of what reading should contribute. Here are some of the factors that must be considered: Reading must have carry over interest, cultivate the ability to abstract deeper meanings, and develop the capacity to evaluate critically, interpret facts and make judgments.

Norwood and Huelsman (1955, p. 221) describes the problem of reading as,

A skill that grows continually, that the range of readers widens in high school and becomes more complex due to variations in classes and diversified reading required.

According to Gromen (1955, p. 136)

The failure of a student to read ade-

quately however, reaches further than a poor academic standing. A report from New York City states that lack of reading ability makes a direct contribution to juvenile delinquency.

Fay (1956, p. 197) concludes,

For any youth to be adequately prepared for the demand reading is going to place on him he must develop all of his ability in all the different aspects of reading.

From evidence given in these statements it can be seen that it is important to improve reading ability for these reasons;

1. Greater ability to read will mean a better understanding of problems and events in our modern technological world.

2. Students in our secondary schools would be able to grasp the more complex reading material they meet in their classes.

3. It would help solve some of the social problems faced by youth today.

Gray (1940, p. 7) summarizes,

Reading is an important aspect of living in school and out. The student never finishes the extension of his skill in the art of reading.

Characteristics of good reading program

Understanding basic principles and characteristics of a program of reading is fundamental in undertaking the task of improving the program. It is also necessary to be able to organize and place responsibility in order to get efficiency, cooperation and beneficial results. McCullough (1958) stressed purposeful classroom organization with emphasis on an analysis

of individual strengths and weaknesses. She indicated that successful programs depended on proper materials, competence and initiative of the teacher, effective use of students to help in numerous activities, and standards of classroom behavior.

Simpson (1958) stated that students' reading abilities must be properly identified and then classified for successful instruction. When grouping for instruction she pointed out the need for flexibility. "Grouping must be flexible with mobility among groups." (Simpson, 1958, p. 42.) Carroll (1959, p. 50) emphasized flexibility of classroom organization at the junior high school level. "Whenever a student in one group needs the type of instruction planned for another group, the student is invited to join the others until a particular skill is mastered."

Principal.--While the reading of a district may be the responsibility of a supervisor and be directed by him the principal assumes the key position in an individual school. Karp (1946, p.302) states,

The principal is the only one in the school that can see the overall situation of the reading program. He is in a key position to correlate the many phases of the program. By stimulating, challenging, and guiding the principal should impress on the teachers the all important ideas of cooperation among the staff, and continuity of reading growth throughout all of the school years.

According to Wiltse (1956, p.345)

The administrator is directly responsible for a school reading program. A good administrator will see that reading instruction is provided on all levels. He should pay special attention to in-service techniques for his teachers.

Teachers.---The teachers as well as the principal play important roles in a successful program of reading improvement. They must be willing to assume the responsibility of teaching reading regardless of the subject they are teaching. Witty (1958) suggested that English and Social Studies teachers play the dominant role in reading instruction although all subject matter teachers should stress reading skills. Blanchard (1955) summarizes the role of the teacher thus,

One of the most prevalent concepts is that all teachers teach reading. This implies that all teachers as a group should understand the attitudes, interests, and tastes of the students, know how they utilize their leisure time, know what sources of reading are available to the student, understand the work-study habits, know the potential reading abilities and provide meaningful and purposeful experiences for all students. (Blanchard, 1955, p. 204)

Robinson and Dramer (1958) states, "There is a noteworthy need for subject matter teachers to concern themselves with the teaching and application of reading skills in their own content area." Gates (1947) presents the characteristics of a proposed program for the improvement of reading. While his proposals are mainly for the elementary school it appears the same principles would be valuable for teachers in our secondary schools. He continues his discussion of this problem by stating,

Successful teaching or remedial work cannot be achieved unless the teacher knows in considerable detail the characteristics of good and poor reading performances. She must know the kinds of devices pupils are likely to employ, the merits and limitations of each of these, and how they should be organized to work as a team, and achieve increasingly higher levels of ability. (Gates, 1947, pp. 15-16)

The awareness the teacher has for the student's needs and the willingness she shows to assume responsibility for teaching reading has a definite bearing on the improvement that is made.

Evaluation.--A system of evaluation is an important characteristic of a good reading program. Where have we been? Where are we now? Where are we going? Finding the answers to these questions will help to make a better program of improving reading. There are several factors in proper evaluation. A very important one is that a set of definite goals and purposes which are understood by everyone working in the program be established. It is suggested by Blanchard (1955 p. 205) that, "A problem often overlooked is the purpose for reading. This purpose would or could vary in different classes. If a teacher could understand the difference between the student's reading and his thinking perhaps much could be done to improve his comprehension." In addition to a set of objectives Blanchard (1955 p. 205) states, "Evaluation should include appraisal of achievement, interpretations on progress or defects, and reaching decisions for future teaching or administration."

Comprehension

The term comprehension is frequently used in literature. However, Bagley (1958 p. 25) states, "It represents a term encompassing many further differentiated descriptions of the reading process." Comprehension is, as summarized by Scholler (1950 p. 201) ". . . a complicated, active, centrally determined,

synthetical process which involves the higher mental functions of reasoning." There are many factors encompassed in comprehension. Bagley (1958, p. 26) states that those identified by Davis (1941), Coleman (1945), and Langsam (1941) in using factor analysis are: "Reasoning in reading," "Word knowledge," "Seeing relationships," and ability to organize specific facts."

The problem of improving reading in general is one closely related to improving the factors in comprehension. Are there ways and methods for making this improvement? Gates (1947) gives the following principles for improving comprehension.

1. Choose the most interesting and challenging material possible.
2. The pupil should be introduced at the beginning to a variety of types of reading.
3. Find material suited to the child's special interests.
4. Provide full opportunity for pupils to discuss, report, and otherwise use what they have learned.
5. Provide opportunity to carry what is learned into other types of action.
6. Provide an abundance of the most attractive supplementary material and arrange a schedule to make free reading possible.
7. Organize various reading and related activities in topical units that continue for some time.

Artley (1944) made a study to determine whether or not there was a relationship between general reading comprehension and reading comprehension in subject matter areas. He concludes that there are findings to indicate there is a relationship

between general and specific comprehension. From his studies he makes the following implications:

1. A teacher responsible for reading needs can make a material contribution toward training that will help his comprehension in the social studies.

2. A social studies teacher that can develop skills for better comprehension in her class will note improvement in reading in other fields.

Reading in the subject matter areas

An enrichment program in the field of social studies through the use of current books, periodicals, newspapers, etc. offers an excellent opportunity for improving the reading of many students. There are several projects reported in the National Association of Secondary School Principals Bulletin (1955) In one of these the students undertook a comparison of United States History as reported in biographies, historical novels, travel books, plays, etc. of the period with the history written in textbooks. Another reported by New York Council on Economic Education centered around international trade by a ninth grade group. The research in this project led to a study of political and economic reasons for and difficulties encountered in this field. The hows and whys of trade and its effect upon history. A project reported by the U.S. Department of Health Education and Welfare describes a program built around present day problems instead of chronological history. These reports all indicate that they are aids in improving reading abilities as well as increasing the knowledge

of the students in this field.

Marie Kerr (1958) in reply to the accusation that reading is not taught in the core curriculum makes the following claims for reading:

1. The program offers wide, rich, and rewarding experiences in functional reading.

2. All core reading is done for a specific purpose and, as measured by standardized tests, phenomenal growth takes place.

3. It is not unusual for a class to show an average growth of from one to one and a half grades in a period of six months.

She attributes these results to the following things:

1. The program is organized on a problem solving basis.

2. Students realize the need for being able to read better and accept this challenge as a goal toward which to work.

3. They use material on their individual reading level.

4. They have an opportunity to do free reading in the library.

Many other authors feel there is an excellent opportunity to teach reading while teaching other subjects. Strang (1940) says, that in the opinion of the committee on reading of the National Society for the Study of Education Yearbook, it is quite probable that the greatest development in the entire area of reading during the next decade will occur in the content fields and on the high school and college levels. She also illustrates programs that have helped improve reading in subject matter fields. She gives one in general by McCallister (1930)

in the content fields. Another by Blank (1932) in biology, a program by Horn (1937) in the social sciences, and one in civics and world history by Lightfoot (1940). Barnett (1953) found a substantial correlation between reading comprehension and grades in American history. Young (1953) pointed out that the reading skills which are most needed in the social studies must be taught in connection with the social studies material. Clark (1956) describes a reading program that was substituted for english I at Phoenix Technical High School. He found that at the beginning of the program there were only 22 per cent who could read on the ninth grade level. At the end of the semester there were 46 per cent who could read ninth grade material. Strang (1955) illustrates techniques used in a science class to improve the different factors in reading. These techniques could well be used in other classes. Flukinger (1958) indicated that teachers of content subjects can profitably use a small part of their class time in directly teaching reading skills related to their area.

Library and the librarian

The library in a high school can be a valuable aid in helping to improve reading. Strang (1940) cites examples of how the library may be used. One is to group part of the books according to story information, having material of different reading difficulty and encouraging students to choose more difficult reading as he progresses. Another was to give every student a library period once a week in addition to his free time. Teachers were assigned to guide the pupils reading,

help arouse their interest, and encourage a varied amount and difficulty of reading material.

The librarian has a definite and important role in such a program. Her responsibility is two fold:

1. To cooperate with the faculty in helping students develop these reading skills essential to mastery of special subjects.

2. Direct or offer instruction in the use of library resources through any of the following avenues or combinations of them;

- a. A course in use of the library.
- b. Correlation with regular subject courses (presenting card catalog, Reader's Guide, etc., when its use is needed in English, History or Science courses).
- c. Instruction of individual students when they feel its need.

Strang (1940) discusses the benefits and the importance of the library in a program of developing better readers. She illustrates several programs that have been successful. She states that the library itself offers the ideal laboratory for the learning situation--the acquirements of skills as life experiences demand them. And just as in every subject the importance of reading should be an integral initial part of instruction in the subject, so in every school library development of reading skills needed in the study of particular subjects should be considered an integral part of the library's field of service.

The library can be of especial help to the slow reader. Burlis (1955, p. 301) says in her article, "The library can and should be a special contribution to the reading lives of these students. Here the students can receive instruction in the use of the library and its tools." Some of the results of a good library program for reading show in a happier pupil-teacher relationship, better discipline and a feeling of achievement for the student. Still another responsibility of the librarian is suggested by Tozier (1955, p.29). In encouraging voluntary reading she says,

A good method of doing this is to set up a library board. This board should consist of the principal, a teacher from each department and students representing each class. They should meet at the request of the librarian and their function should be to develop a library service and assist in making a library policy for selecting, evaluating and discarding books.

Free reading.--The use of one period in the library once a week seems to be of great value in helping to increase interest, scope and comprehension in reading. Potter (1955) reports an experiment with such a program at the University High School, Urbana, Illinois. With the help of the librarian and teachers a list of important books was prepared and those in the library were starred. This served as a guide as to what educated people are expected to read. The pupils were then allowed to use the weekly period for free reading under the supervision and guidance of the teacher and librarian. The students were not required to keep records but teachers recorded the books read by each student for guidance purposes. An evaluation of this program showed an increase in interest,

the students were reading more books and their reading ability had showed a marked increase.

Mechanical devices

Many mechanical devices are used for the improvement of reading, principally they purport to increase the rate of comprehension. Gates (1947) discusses the use of the metronoscope and other devices. While he feels they are helpful he believes equally good results can be obtained from the use of ordinary methods and materials. He says,

It seems sound to advise that improvement of speed of reading and other aspects of the process thus far experimentally examined can be obtained in general or for most children, quite as well with ordinary materials provided the program is properly managed and pupil effectively instructed as with the complicated mechanical apparatus. (Gates, 1947, p. 86)

An experiment with mechanical devices at McKinley High School, Washington D.C. is reported by Bish (1952). He says,

Basic equipment consisted of a one keystone No. 46 telebinocular with visual survey tests, one keystone tachistoscope with span development slides, two near point tachistoscopes with 2 by 2 digit slides, and six S.R.A. accelerators. (Bish, 1952, p. 90)

He concludes,

After nine weeks of training twenty two of the twenty four students showed reading gain. The two that showed no gain at the end of the nine week period did show gain nine weeks later. Fifty per cent of the students continued to show reading gain nine weeks after the class ended. (Bish, 1952, p.94)

Miller (1956) has furnished a list of devices and equipment that is available and beneficial in helping to improve reading. He cautions that before a school starts buying equipment for the improving of reading it should establish just what goals

it hopes to reach, then only buy the necessary equipment to reach these goals.

Special reading classes

Another area of reading improvement that seems to be developing in the secondary schools is that of organizing special reading classes. Some of these are especially for superior students, some are for retarded readers and some are organized with no attempt at segregating the students. A few of these are discussed herein.

A special reading class which is required of all the ninth grade students and is open to some senior high students is reported by Brawn and Peterson (1957). The major functions stressed were;

1. Comprehension.
2. Speed of reading.
3. Vocabulary building.
4. Development of good study habits.

There were several techniques used. These included vocational preference tests, the tachistoscope and reading accelerator, reading tests, and special books on improving reading. The testing program, students own evaluations and other checks all showed the program was successful in improving reading ability as well as better attitudes toward reading and school in general. Huttner and Hasamanek (1957) report a special class for the superior student. Their study indicates the need for such a class because many investigations point out that superior students do not read as well as they could or should. The class was limited to twenty superior

students for whom it would likely be most beneficial. They organized the class around specific topics that would help improve their reading ability. The results showed that the class broadened their reading interests, increased their rates and developed their ability in critical thinking and problem solving.

A description of the Eugene Oregon, high school elective reading class is made by Beacon and Gillett (1955). They state,

No attempt is made to segregate the pupils in the class. One of the strengths is that it is not a bonehead class. It has been found that a failing student is encouraged to find he is sitting next to a "brain" competing only with himself. From the first day in class the student is told that reading is his own responsibility. He learns to work as an individual in a group. (Beacon and Gillett, 1955, p.135)

Fay (1956) suggests two approaches to the problem of improving reading in high school:

1. Provide regular reading classes.
2. Set up units in existing classes.

He indicates the following basic foundations should be included:

1. A good attitude toward reading.
2. Vocabulary development.
3. Mastery of word recognition and word analysis techniques.
4. Better thinking.
5. Faster readers.
6. Better oral readers.

Reactions for and against special reading classes by teachers, administrators and students are described by Carillo (1956). He summarizes that although it is obvious that many

things must be considered, all research shows much can be gained by having a reading program. If an administrator and his faculty are willing and in favor, a reading class may well solve some of their problems. Robinson and Udall (1955) describe a reading program that has been effective in Valley Stream, New York. In this article they discuss the basic principles of the program. In reporting a reading course for seniors in the Rufus King High School, Milwaukee, Wisconsin, Gardner (1957) says that the new class was an addition to the remedial program that had already been set up. This class was organized to stress comprehension, study techniques, vocabulary, and rate of reading. It is for the average or above average student that feels he would like to improve his reading.

Another approach to improving reading is a class in speed reading as described by Bond (1955). Still another special class entitled, "Skills and Techniques for Better Reading" was added to the reading program at Union High School, Union, New Jersey. It is described by Stahuber (1956). A class taught during the summer on an experimental basis is outlined by Clark (1953). The purpose was to determine if techniques and methods could be developed that would improve reading skills and habits. Still another class has been reported by Donahue (1953). In this class she used cartoons, one act plays, and poetry to develop better reading on the part of the students.

It seems conclusive from evidence presented by these

authors that there is a great deal of value in organizing special classes to help in improving the reading abilities of students in the secondary schools.

Remedial programs

While it is important that we try to improve the reading ability of all pupils, it is equally as important that we recognize the existence of a group of students with problems in reading. This is a group who read slowly and with little comprehension. They are in definite need of help in their reading. Strang (1940) describes several different remedial programs that seem to merit study by those seeking help in teaching reading. There is a program described by Jacobson (1933) which concerns two experiments in the improvement of reading through special drills in connection with regular classes. A procedure followed in another high school is described by Barry and Pratt (1937). A plan used by Wibby and LaBrant (1933) is also reported. Some other programs discussed are by Witty and Kopel (1936), Corry and Schneirla (1935), Wagner (1932), Walcott (1936), Deal and Seamons (1937), Traxler (1933), McCallister (1931), and Legitt (1934).

Dorothy G. Yorgan (1958) reports on a remedial class for slow learning students at Phillips Junior High School in Minneapolis. This class is made up of seventh and eighth grade students who are at least two years retarded in reading with a recent I.Q. rating of about 80 to 95 and a final recommendation from the double period teacher who had the students in class. The express purpose of the classes was to go back and pick up what the students had missed in the following areas:

1. The fundamental skills of reading.
2. Study habits and techniques.
3. Development of concentration.
4. Independent completion of definite assignments.

Gray (1952) recognized the need for emphasizing assistance to the poor readers. He outlined eight essential parts of a good reading program for the retarded readers.

All of these authors realize and stress the fact that there is a special group of students who are retarded and slow readers. Their suggestions are such that they have proven successful in schools where they have been used.

Intelligence and reading

Many studies and investigations show a high relationship between reading and intelligence. Correlations of .79 and .59 between reading tests and the "American Council on Education Psychological Examination" were reported by Jackson (1951) and Lee (1951) respectively. Pitts (1952) found correlations which suggested a marked relationship among functional competence in mathematics, reading and I.Q. Triggs and others (1954) found that reading skills showed a closer relation to verbal than to non-verbal ability. Clark (1952) presented additional articles suggesting evidence that reading is related to I.Q. at each grade level. Barber and Grilk (1952) though unable to detect a relationship between speed of reading and comprehension and I.Q. at the tenth grade level did find other interesting relationships. A report in the Journal of Educational Psychology (1939) suggests that the

ingredients of a reading improvement program is intelligence plus some unknown factors which need to be controlled if the program is to be a success.

PROBLEM

Since reading is a vital and necessary part of every day living, it is extremely important that every method and means available be utilized to improve reading performance. This is especially true in the secondary school. Potter (1948) states there were some 10,000 articles and reports of research written about reading to 1951. Betts (1943), Gray (annually), and Witty (1950) have published periodic listings of reading investigations. Numerous articles have been written which contain recommendations for the improvement of reading.

Statement of problem

This study undertakes an experiment with one of the programs for improving reading, the instrument used was the one published and recommended by the Science Research Associates. It is called the Science Research Associates Reading Laboratory program. The experiment using two matched groups of seventh grade students attempts to answer the following questions;

1. By controlling such factors as length of periods, number of classes, method of procedure etc., does a group using the S.R.A. program improve faster in reading ability than a group using other literature and reading texts?
2. If there is more improvement evidenced in using the S.R.A. program, is the progress differential enough to be adjudged significant?

3. Is there evidence of other items such as greater interest, self-evaluation, broadening of reading areas etc. with the group using the S.R.A. program?

Delimitation of the problem

Because of the volume of literature pertaining to improvement of reading an entire review of literature in this field is beyond the scope of this thesis. The review of literature, rather, includes selected literature by recognized authors in texts, periodicals and professional magazines. The material in literature cited section pertains principally to improvement of reading in the secondary field.

There has been no attempt to analyze the factors in reading, the skills in reading, abilities in reading and other variables. The only reference to these has been as they were treated in the literature cited in relation to the improvement of reading.

This study is an experiment with the S.R.A. Reading Laboratory. The experiment was conducted with a class of seventh grade students in their literature class. It was concerned only with an attempt to measure any significant difference in reading improvement with a group of students using the S.R.A. program and a group of students who used another reading procedure in their class.

PROCEDURE

Choosing groups

In order to have the two groups divided as evenly as possible they were grouped on the basis of the California Reading Test which had been administered to students in March 1959. The boys and girls were listed in rank order from the highest to the lowest according to the total score on the test. By taking alternate names they were then placed in the "A" and "B" groups. The accompanying table gives medians for group "A" and group "B" on their total score, grade equivalent and percentile rank on the California Reading Test.

Table 1. Median scores on California Reading Test

	Total Score	Grade Equivalent	Percentile Rank
Group "A" (Experimental)	108.5	6.8	51.1
Group "B" (Control)	109	6.8	53.4

Preliminary tests

Before starting on the S.R.A. program with the experimental group two other tests were given. One of these was the Iowa Silent Reading Test (Elementary Form Am) and the California

Short-Form-Test of Mental Maturity (Intermediate Grades 7-10). These tests were administered the first two weeks of school. At the beginning of the third week the experimental group began working with the S.R.A. Reading Laboratory while the control group continued with a study of literature and spelling. The groups met every other day alternating their reading and music periods.

By the fourth week the experimental group had completed studying the preliminary instructions and were given the Starting Level Test. When the starting level was determined they proceeded to carry on lessons as outlined in the S.R.A. Reading Laboratory.

Relating program to S.R.A.

In order to get results as accurate as possible every effort was made to follow the instructions of the S.R.A. program as closely as possible. The students carried out their part of the program as outlined. Student helpers were assigned to assist the teacher and the students with the lessons. Each student was asked to mark his record chart and write in his booklet an evaluation to help him recognize his weaknesses and areas in which he needed to improve. The timing on each lesson was checked closely to see that work was completed as outlined.

Modifications of program

To make it possible to complete the study in one semester there were some changes made in the time schedule. The S.R.A.

program recommends the following time allotment:

First month----	Five periods per week for four weeks.	20 periods
Second month---	Three periods per week for four weeks.	12 periods
Third month----	Two periods per week for four weeks.	8 periods
Later months---	To be scheduled as convenient.	10 periods
	Total.	<u>50 periods</u>

Since the literature classes alternated with music every other day the students were getting approximately two lessons one week and three lessons the next week from September until January. During January the class schedule was changed so as to permit both groups to take literature every day in order to complete the recommended lessons by the end of the semester. The schedule of lessons was as follows:

September	Preliminary instruction		8 periods
October	Power--5	Rate--5	
November	Power--4	Rate--4	
December	Power--4	Rate--4	Listening--2
January	Power--8	Rate--8	Listening--4
	<u>Total. .21</u>	<u>Total. .21</u>	<u>Total. . 6</u>

Method of comparison

Before beginning the actual work on the S.R.A. Reading Laboratory the results of the Iowa Silent Reading Tests were tabulated and the students were matched pair by pair. The means on the total score were:

Experimental	147.9
Control	147.5

Comparison of initial ranks--experimental group

At the beginning of the experiment the following tests were given:

1. The California Short Form Test of Mental Maturity. (Intermediate Grades 7-10. Both groups.)
2. Iowa Silent Reading Test. (Form Aa. Both groups.)
3. S.R.A. Reading Laboratory Starting Guide. (Experimental group.)

Table 2 is a tabulation of the Rho correlation of these tests using the rank order method of correlation for the experimental group.

Table 2. Rho correlation on initial tests, experimental group

Test	Rank Order Correlation
S.R.A. and California Test of Mental Maturity	$\rho = -.44$
S.R.A. and Iowa Reading Test--Comprehension	$\rho = -.80$
S.R.A. and Iowa Reading Test--Rate	$\rho = .08$
S.R.A. and Iowa Reading Test--Total score	$\rho = .19$
S.R.A. and California Reading Test	$\rho = -.28$
California Test of Mental Maturity and Iowa--Total	$\rho = -.10$
California Reading Test and Iowa--Total score	$\rho = .22$
California Reading Test and Iowa--Comprehension	$\rho = -.9$

An examination of this table shows there is no uniform correlation in the ranks of the scores of the students in these tests. Comparison of the S.R.A. and California Mental

Maturity, S.R.A. and comprehension of the Iowa Silent Reading test, S.R.A. and the California Reading Test given in March 1959 showed a negative correlation. This was also true of the California Mental Maturity Test and the total score on the Iowa Reading Test. There was low positive correlation between the S.R.A. Reading Guide and the rate of reading on the Iowa Test, the S.R.A. and the total score of the Iowa Test. The scores on the California Reading Test and the total scores of the Iowa Test also showed a low positive correlation.

There was low or negative correlation on ranks of the students on these tests. However, the mean grade placement was similar on the California Reading Test and the Iowa Reading Test. In contrast to this the mean grade placement on the S.R.A. Starting Guide was more than two grades lower than the other tests. Table 3 indicates the scores showing grade placement of the students on each test and the mean grade placement.

Progress during experiment

The objective of the experiment was mainly to measure the progress made and to see if one group made significantly more improvement in reading than the other. Comparisons have been made in two ways. The first is on the basis of grade placement. The other method of comparing results has been done by computing the correlations and t-scores on the rate, comprehension and total scores of the Iowa Silent Reading Tests.

Table 4 gives the grade placement in September and in February and the gain made by each student in the matched

pairs. These statistics were taken from total scores.

The mean grade placement and net gain for each group was:

	<u>September</u>	<u>February</u>	<u>Net gain</u>
Experimental	6.9	8.6	1.7
Control	6.9	8.3	1.4
Difference between groups		.3	.3

Table 3. Comparison of grade placement--experimental group

Student	Cal. Reading Test	Iowa Reading Test	S.R.A. Starting Guide
A	10.5	12.7	6
B	8.5	9.6	6
C	8.5	8.8	6
D	8.3	9.4	5
E	8.3	7.7	4
F	8.0	9.0	4
G	7.9	10.3	6
H	7.9	8.3	6
I	7.8	12.3	7
J	7.6	5.2	3
K	7.5	8.5	6
L	7.3	7.6	4
M	7.3	6.9	4
N	7.0	4.8	3
O	6.9	6.9	4
P	6.9	4.9	3
Q	6.8	6.8	6
R	6.8	7.7	5
S	6.6	7.1	5
T	6.5	6.7	4
U	6.5	7.7	3
V	6.3	5.6	3
W	6.0	4.8	3
X	5.9	5.0	3
Y	5.9	3.9	3
Z	5.7	4.9	3
a	5.3	6.2	4
b	5.1	4.0	3
c	4.2	4.4	3
d	3.7	3.5	4
e	2.8	3.0	3
Mean	6.8	6.9	4.3

Table 4. Gain in grade placement

	Experimental			Control			
	Sept.	Feb.	Gain	Sept.	Feb.	Gain	
A	12.7	13.1	+ .4	A'	10.5	10.8	+ .3
B	12.3	15.5	+3.2	B'	10.3	10.3	.0
C	10.3	11.0	+ .7	C'	10.3	10.0	- .3
D	9.6	11.3	+1.7	D'	10.3	10.8	+ .5
E	9.4	11.6	+2.2	E'	9.6	10.5	+ .9
F	9.0	10.8	+1.8	F'	9.6	9.6	.0
G	8.8	12.3	+3.5	G'	8.5	8.8	+ .3
H	8.5	10.5	+2.0	H'	8.2	9.6	+1.4
I	8.3	10.0	+1.7	I'	8.2	7.7	- .5
J	7.7	7.9	+ .2	J'	7.5	10.8	+3.3
K	7.7	10.0	+2.3	K'	6.9	9.4	+2.5
L	7.7	8.7	+1.0	L'	6.7	8.7	+2.0
M	7.6	10.0	+2.4	M'	6.5	10.5	+4.0
N	7.1	8.5	+1.4	N'	6.4	9.8	+3.4
O	6.9	8.0	+1.1	O'	6.3	6.9	+ .6
P	6.9	9.7	+1.8	P'	6.3	9.2	+2.9
Q	6.8	8.2	+1.4	Q'	6.3	8.2	+1.9
R	6.7	8.0	+1.3	R'	6.2	7.1	+ .9
S	6.2	7.2	+1.0	S'	6.2	7.1	+ .9
T	5.6	7.5	+1.9	T'	6.1	10.0	+3.9
U	5.1	7.1	+2.0	U'	6.0	7.6	+1.6
V	5.0	5.8	+ .8	V'	5.8	9.0	+3.2
W	4.9	7.1	+2.2	W'	5.7	6.4	+ .7
X	4.9	6.8	+1.9	X'	5.4	7.9	+2.5
Y	4.8	5.4	+ .6	Y'	5.0	7.9	+2.9
Z	4.8	8.2	+3.4	Z'	4.9	6.8	+1.9
a	4.4	4.8	+ .4	a'	4.8	7.3	+2.5
b	4.0	5.5	+1.5	b'	4.6	4.3	- .3
c	3.9	5.5	+1.5	c'	4.2	6.2	+2.0
d	3.5	7.9	+4.2	d'	3.8	4.9	+1.1
e	3.0	3.6	+ .6	e'	3.4	3.7	+ .4

Growth in rate--grade equivalent

Table 5 indicates the scores of each student in the matched group on rate of reading in September and in February. Most of the students made considerable gain. However this was not consistent throughout the groups. A study of the table shows that some had little gain and a few had a lower score in February than in September. Both groups on a whole made consistent gains, the experimental making a total gain of 2.0 grades and the control 1.7 grades. This made a difference of .3 of a grade between the groups in rate of reading.

Comprehension--grade equivalent

The scores of each individual in September and October are shown in Table 6. This shows similar variations in individual scores but with consistent development made by both groups. Using the grade equivalent as taken from the mean standard score of each group indicates that the experimental group gained 2.7 grades while the control group made a gain of 2.2 grades. This made a difference of .5 of a grade in the February test on comprehension.

Total score--grade equivalent

Using the same comparison in the total score as shown in Table 7 the pattern of progress is essentially the same. There are quite a few variations in individual scores but the means of the group and the grade equivalents are very close. The experimental group gained 1.7 grades and the control group made a gain of 1.5 making a difference of .2 grades.

Comparison of means

Table 8 shows the means of each group in September and February, the gain made by each group, and the difference between groups.

Table 5. Growth in rate--Iowa Silent Reading Test

	<u>Experimental</u>		<u>Control</u>		
	<u>Sept.</u>	<u>Feb.</u>	<u>Sept.</u>	<u>Feb.</u>	
A	171	179	A ^o	171	167
B	170	167	B ^o	170	160
C	167	174	C ^o	167	140
D	165	172	D ^o	165	160
E	165	183	E ^o	163	160
F	162	179	F ^o	160	170
G	158	163	G ^o	155	151
H	158	160	H ^o	151	158
I	155	158	I ^o	151	155
J	149	156	J ^o	149	163
K	149	155	K ^o	149	162
L	149	155	L ^o	144	138
M	149	142	M ^o	142	138
N	140	175	N ^o	140	170
O	138	133	O ^o	138	149
P	138	140	P ^o	138	163
Q	135	140	Q ^o	135	156
R	135	156	R ^o	135	147
S	133	114	S ^o	133	147
T	133	144	T ^o	144	147
U	128	149	U ^o	128	140
V	125	138	V ^o	128	155
W	125	133	W ^o	125	155
X	122	131	X ^o	125	131
Y	122	142	Y ^o	125	131
Z	115	131	Z ^o	122	133
a	115	140	a ^o	119	131
b	94	97	b ^o	119	138
Mean	142	152		142.4	151
Grade Equivalent	5.3	7.3		5.3	7.0

Table 6. Comprehension--Iowa Silent Reading Test

	Experimental		Control		
	Sept.	Feb.	Sept.	Feb.	
A	178	185	A'	178	160
B	178	178	B'	172	172
C	167	178	C'	167	162
D	162	185	D'	162	178
E	157	157	E'	162	167
F	152	172	F'	157	162
G	152	185	G'	157	172
H	148	162	H'	157	172
I	148	162	I'	152	172
J	148	162	J'	148	167
K	144	128	K'	148	167
L	144	128	L'	148	185
M	140	162	M'	144	162
N	140	157	N'	144	148
O	140	132	O'	140	167
P	136	185	P'	140	148
Q	136	148	Q'	140	167
R	136	141	R'	136	185
S	136	141	S'	136	162
T	136	141	T'	136	152
U	132	167	U'	132	185
V	132	144	V'	128	172
W	132	172	W'	128	157
X	132	144	X'	123	141
Y	123	162	Y'	123	144
Z	123	152	Z'	123	139
a	123	144	a'	118	144
b	118	167	b'	118	136
c	114	139	c'	114	128
d	114	144	d'	114	139
e	114	109	e'	109	109
Mean	140	158		140	155
Grade Equivalent	5.4	8.1		5.4	7.6

Table 7. Total score--Iowa Silent Reading Test

	Experimental		Control		
	Am Sept.	Em Feb.	Am Sept.	Em Feb.	
A	179	180	A ¹	172	173
B	178	184	B ¹	171	171
C	171	174	C ¹	171	170
D	168	175	D ¹	171	173
E	167	176	E ¹	168	172
F	165	173	F ¹	165	168
G	164	178	G ¹	162	164
H	162	172	H ¹	160	168
I	161	170	I ¹	160	157
J	157	158	J ¹	155	173
K	157	170	K ¹	151	167
L	157	163	L ¹	149	163
M	156	170	M ¹	148	172
N	152	162	N ¹	147	169
O	151	159	O ¹	146	151
P	151	163	P ¹	146	166
Q	150	160	Q ¹	146	160
R	149	159	R ¹	145	152
S	145	153	S ¹	145	152
T	140	155	T ¹	144	170
U	135	152	U ¹	143	156
V	134	142	V ¹	142	165
W	133	152	W ¹	141	147
X	133	150	X ¹	138	158
Y	132	138	Y ¹	134	158
Z	132	160	Z ¹	133	150
a	128	132	a ¹	132	154
b	124	139	b ¹	130	127
c	123	150	c ¹	126	145
d	119	158	d ¹	122	133
e	114	120	e ¹	118	121
Mean	148	160		148	159
Grade Equivalent	6.5	8.2		6.5	8.0

Table 8. Gains and differences in means

Test	Experimental Means			Control Means			Difference
	Sept.	Feb.	Gain	Sept.	Feb.	Gain	
Rate	142	152	10	142.4	151.0	8.6	1.4
Compre- hension	140	158	18	140	155	15	3.0
Total Score	148	160	12	148	159	11	1.0

From this data as in the comparison of grade equivalents it is evident there was a small amount of progress made by the experimental group than by the control group. The question then arises as to whether the gains made by the experimental group are significant. In order to answer this question the following data was computed for the sub-tests on rate and comprehension and the total score on the Iowa Silent Reading Tests.

1. Means.
2. Standard deviations.
3. Standard error of the means.
4. Standard difference of the means.
5. Correlation and ρ -scores between groups.

Table 9 gives a summary of the information obtained from these computations. Correlations were .55 for rate, .25 for comprehension and .78 for total scores.

The results obtained by computing the ρ -scores show there

was a slight difference in the improvement made by the two groups. In each of the tests the experimental group improved a little more than the control. However, since the T-scores were, rate .33, comprehension .81, and total scores .6 indications were that they were not significant at either the 1 per cent or the 5 per cent level.

Table 9. Statistics on Iowa Silent Reading Tests

	Date	No.	Mean	S.E.M.	S.D.	S.D.M.	T-Score
<u>Test rate</u>							
Experimental	9-4-59	28	142	3.68	19.5	.7	.57
Control	9-4-59	28	142.4	2.99	15.85	.7	.57
Experimental	2-3-60	28	152.0	3.6	19.05	3.03	.33
Control	2-3-60	28	151.0	2.34	12.4		
<u>Comprehension</u>							
Experimental	9-4-59	31	140	3.0	16.53	.06	0.0
Control	9-4-59	31	140	3.0	17.95		
Experimental	2-3-60	31	158	3.0	19.0	3.7	.81
Control	2-3-60	31	155	3.0	17.0		
<u>Total score</u>							
Experimental	9-4-59	31	148	2.2	18.0	.28	0.0
Control	9-4-59	31	142	2.7	15.0		
Experimental	2-3-60	31	160	2.6	15.0	1.7	.6
Control	2-3-60	31	159	2.4	13.0		

SUMMARY AND CONCLUSIONS

Summary

This study was undertaken to determine what effect the use of the Science Research Associates Laboratory Reading Program might have on the students' growth in reading. It was conducted as an experiment with two groups of seventh grade students. The experimental group worked with the S.R.A. reading program while the control group studied an approved literature text book. The study was carried on for one semester, approximately from September 1, 1959 to January 31, 1960.

In order to match the groups as evenly as possible at the beginning of the experiment and to be able to measure the progress accurately at the close the following tests were given:

The California Test of Mental Maturity (7-8-9).

The California Reading Test (Elementary Form 4-5-6).

Iowa Silent Reading Test (Form Am).

Iowa Silent Reading Test (Form Lm).

The results of the study were measured on the basis of matched pairs as they were established at the beginning of the experiment.

Conclusions

1. A general review of the literature indicates there are many suggestions and programs either completed or in the process

of experimentation to help improve reading in the secondary schools.

2. Improvement of reading is a continuing process in which methods, materials and other factors must undergo continuous scrutiny and evaluation.

3. Results obtained from the initial tests indicated that the experimental and control groups were quite evenly matched in both mental ability and achievement in reading as measured by group means and grade placements on the tests.

4. Comparison of the rank of the experimental group on the initial tests by means of the Rho correlation indicates there was little correlation of the rank of the individuals on these tests.

5. Examination of the mean grade placement of the groups show that the experimental group using the S.R.A. program made greater progress than the control group. This group also made more improvement as measured by rate of reading, comprehension and total scores as shown by the Iowa Silent Reading Tests. More growth was evidenced in comprehension than in rate of reading and total score.

6. While the study showed a slight increase in growth in favor of the experimental group an analysis of the t -scores indicate the difference was not significant at either the 1 per cent or the 5 per cent level.

7. The S.R.A. program appears to stimulate interest and self evaluation, as well as enabling the student to read on a level of his ability and helps to broaden the area and type of

material read.

8. The greatest benefit from the S.R.A. program apparently would come from using it as a supplementary aid to stimulate students to more conscientious effort to improve their ability to read.

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