THE EFFECTS OF TEACHING STUDY SKILLS AND READING, WRITING,  
AND LISTENING SKILLS AS A SPECIFIC COURSE OF 
STUDY FOR NINTH GRADE STUDENTS

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THE EFFECTS OF TEACHING STUDY SKILLS AND READING, WRITING, AND LISTENING SKILLS AS A SPECIFIC COURSE OF STUDY FOR NINTH GRADE STUDENTS

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by

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CHAPTER I

INTRODUCTION

There is general concensus that few students fully utilize their scholastic potential in academic school work. Many reasons are recognized as contributing to this failure but the one most often given is that many students have never really learned how to study. Andrea (1) states that high school teachers complain that the children do not know how to apply themselves to study. The upper elementary teachers complain that the children can't be taught study skills in the upper elementary grades because their bad study habits are too firmly rooted to be eradicated. Sharp (13) states that one of the most serious problems recognized by colleges and universities today is the number of potentially good students who are failures because they do not know how to study. Muse (12, p. 47) further adds, "In a graduate school today much is heard, from time to time, concerning how 'few students possess real research ability.' . . . May not the answer be found in the sad lack of training in study techniques during the years when their habits of study were crystallizing?" Wooster (16) concludes that while one should be able to assume that by the time a student reaches college
he knows how to study, experience and research have
demonstrated that this is not a warranted assumption.

It cannot be assumed that students will learn these
needed study skills as normal maturation occurs. Brown (2)
writes that studying is more or less a technique, and
techniques come more readily through instruction. They are
taught, rarely caught. Howell (8, p. 384) concurs with this
in his statement, "Children must be taught the techniques
underlying work-study skills if more satisfactory scholar-
ship achievement is to be attained."

Davis (5) and Bond (3) write that the teaching of study
skills in today's schools is incidental, haphazard, and
unsystematic. James (9) adds, "It is an odd pedagogical
phenomenon that many teachers who exert so much effort trying
to motivate, evaluate, and reward study often fail to teach
students how to study." Frederick (7) concludes that basic
learning techniques other than reading have been left to
chance.

These needed study skills must be specifically taught
and there is criticism, especially at the secondary level,
that these skills are not being taught adequately in
connection with basic subjects being taken. Wagner (18)
feels that the development of study skills and habits is
normally considered to be a function of the various curriculum
areas. However, Howell (8, p. 384) states, "Seldom, if ever,
are the techniques of how to study included in the day-by-day
or week-by-week lesson plans of the teachers in the subject-matter areas where this is necessary and applicable."

These criticisms concerning the failure of the public schools of America to adequately teach study skills exist also in Texas, despite the fact that the teaching of study skills and reading, writing, and listening skills is an integral part of the course of study for English, grades seven through twelve, as outlined in the T.E.A. Bulletin 615 (14, p. 73). Specifically, the following instructions are given:

In the area of study skills, the student is learning a step-by-step method of attack on study-reading, learning to read and follow directions calling for substeps, acquiring some proficiency in using the card catalogue and standard library reference books, reading complex tables, maps, and charts with some independence; using prefaces, introductions, and other parts of books as aids to study.

Composition, oral and written, is continuous in the program. Instruction necessary to effective communication, including spelling, capitalization, punctuation, manuscript form, handwriting, usage, and grammar, is carefully coordinated with reading, writing, speaking, and listening activities.

These instructions for the teaching of English given by the Texas Education Agency progress until in grade twelve it is assumed that the students have learned to use the study skills and reading, writing, and listening skills with independence.

The failure of teaching these needed skills as a part of the English course of study is made evident by the
continued criticism that many students still do not know how
to study, and would indicate that a different approach to
teaching these skills should be attempted. Chayney (4)
states that incidental teaching of work-study skills must
give way to more definitiveness. Donald (6) adds, "The need
is urgent today for a sound program of study which provides
emphasis on all the attitudes and skills that made for
efficient study habits." Josephina (11) concludes that
incidental teaching of study skills may have some value, but
for academic success, teachers should be conscious of the
need for direct presentation.

Jones (10) feels it is not the business of a college to
teach study habits, rapid reading, etc., but that these
should be handled by the grammar school and high school.
Townsend (15) says that the college years are a late time for
the introduction of work in study reading and other study
methods.

Few attempts have been made to teach study skills and
reading, writing, and listening skills as specific subject
matter other than at the college level or in special summer
sessions for the public schools. Where these attempts have
been made, some improvement in academic success has been
noted.

Statement of the Problem

The problem of this study was to test the effects of
teaching selected study skills and reading, writing, and
listening skills as a specific course of study for ninth grade students.

To study this problem, the performance of students enrolled in a study skills and reading, writing, and listening skills course was compared to that of a comparable group of ninth graders, electing the course but not permitted to take it, on the basis of performance as measured by mean gain on alternate forms of the Spitzer Study Skills Test and on the Sequential Test of Educational Progress--Reading-Writing-Listening.

Definition of Terms

1. **Experimental group**.--Ninth grade students from one junior high school electing the study skills and reading, writing, and listening skills course for the first semester of the 1968-1969 school year.

2. **Control group**.--Ninth grade students from the same junior high school electing the study skills and reading, writing, and listening skills course, but not permitted to take it during the first semester of the 1968-1969 school year. This group was enrolled in World Geography, taught by the same teacher who taught the experimental group.

3. **Study skills**.--(a) Locating, selecting, and evaluating information; (b) Organizing information and note taking; (c) Reading maps, charts, and graphs; (d) Taking tests.
Assumptions

1. Knowledge of study skills and reading, writing, and listening skills is an important factor in successful academic achievement.

2. It is possible to design a course of study to teach selected study skills and reading, writing, and listening skills.

3. Matching students, based on desire to take the course, intelligence test scores, and sex, will provide comparable students for the experimental and control groups.

4. The teacher involved in the study will be equally effective in teaching the Study Skills and World Geography classes.

Limitations of the Study

The study was limited to the 150 ninth grade students electing the study skills course in one junior high school.

The study was limited to the first semester of the 1968-1969 school year.

The study made no attempt to include all study skills. It was limited to the study skills listed in the definition of terms.

Hypotheses

The following hypotheses were tested:

1. There will be no significant difference between the mean gain made by the experimental group on the Spitzer Study
SkilTs Test and the mean gain made by the control group.

2. There will be no significant difference between the mean gain made by the boys in the experimental group on the Spitzer Study Skills Test and the mean gain made by the boys in the control group.

3. There will be no significant difference between the mean gain made by the girls in the experimental group on the Spitzer Study Skills Test and the mean gain made by the girls in the control group.

4. There will be no significant difference between the mean gain made on the Spitzer Study Skills Test by the students in the experimental group
   a. with intelligence test scores which place them in the upper third of the experimental group and the mean gain made by the students with intelligence test scores which place them in the middle third of the experimental group.
   b. with intelligence test scores which place them in the upper third of the experimental group and the mean gain made by the students with intelligence test scores which place them in the lower third of the experimental group.
   c. with intelligence test scores which place them in the middle third of the experimental group and the mean gain made by the students with intelligence test scores which place them in the lower third of the experimental group.
5. There will be no significant difference between the mean gain made by the experimental group on the *Sequential Tests of Educational Progress*--Reading and the mean gain made by the control group.

6. There will be no significant difference between the mean gain made by the boys in the experimental group on the *Sequential Tests of Educational Progress*--Reading and the mean gain made by the boys in the control group.

7. There will be no significant difference between the mean gain made by the girls in the experimental group on the *Sequential Tests of Educational Progress*--Reading and the mean gain made by the girls in the control group.

8. There will be no significant difference between the mean gain made on the *Sequential Tests of Educational Progress*--Reading by the students in the experimental group

   a. with intelligence test scores which place them in the upper third of the experimental group and the mean gain made by the students with intelligence test scores which place them in the middle third of the experimental group.

   b. with intelligence test scores which place them in the upper third of the experimental group and the mean gain made by the students with intelligence test scores which place them in the lower third of the experimental group.

   c. with intelligence test scores which place them
in the middle third of the experimental group and the mean gain made by the students with intelligence test scores which place them in the lower third of the experimental group.

9. There will be no significant difference between the mean gain made by the experimental group on the Sequential Tests of Educational Progress--Writing and the mean gain made by the control group.

10. There will be no significant difference between the mean gain made by the boys in the experimental group on the Sequential Tests of Educational Progress--Writing and the mean gain made by the boys in the control group.

11. There will be no significant difference between the mean gain made by the girls in the experimental group on the Sequential Tests of Educational Progress--Writing and the mean gain made by the girls in the control group.

12. There will be no significant difference between the mean gain made on the Sequential Tests of Educational Progress--Writing by the students in the experimental group

a. with intelligence test scores which place them in the upper third of the experimental group and the mean gain made by the students with intelligence test scores which place them in the middle third of the experimental group.

b. with intelligence test scores which place them in the upper third of the experimental group and the
mean gain made by the students with intelligence test scores which place them in the lower third of the experimental group.

c. with intelligence test scores which place them in the middle third of the experimental group and the mean gain made by the students with intelligence test scores which place them in the lower third of the experimental group.

13. There will be no significant difference between the mean gain made by the experimental group on the **Sequential Tests of Educational Progress**--Listening and the mean gain made by the control group.

14. There will be no significant difference between the mean gain made by the boys in the experimental group on the **Sequential Tests of Educational Progress**--Listening and the mean gain made by the boys in the control group.

15. There will be no significant difference between the mean gain made by the girls in the experimental group on the **Sequential Tests of Educational Progress**--Listening and the mean gain made by the girls in the control group.

16. There will be no significant difference between the mean gain made on the **Sequential Tests of Educational Progress**--Listening by the students in the experimental group

   a. with intelligence test scores which place them in the upper third of the experimental group and the mean gain made by the students with intelligence test
scores which place them in the middle third of the experimental group.

b. with intelligence test scores which place them in the upper third of the experimental group and the mean gain made by the students with intelligence test scores which place them in the lower third of the experimental group.

c. with intelligence test scores which place them in the middle third of the experimental group and the mean gain made by the students with intelligence test scores which place them in the lower third of the experimental group.
CHAPTER BIBLIOGRAPHY


CHAPTER II

REVIEW OF RELATED LITERATURE

The desire to learn has always been one of the recognizable characteristics of human beings. Before the invention of writing and the ability to reproduce written materials in quantity, the need for formal study presented no particular problem. Mankind merely learned by experience or by word of mouth.

As society became more complex and written records more numerous, the skills necessary for assimilating and using this information became more difficult. To aid man in his endeavor to learn, society established schools from which has evolved our present educational system.

That not all teachers teach alike or have the same theories about how students may best learn is apparent. In the Great Didactic of John Amos Comenius, Keatings (86, p. 165) quotes,

The teacher is himself the most important factor. With a little skill it will be possible for him to arrest the attention of the pupils, collectively and individually, and to imbue them with the notion that the mouth of the teacher is a spring from which streams of knowledge issue and flow over them, and that, whenever they see the spring open, they should place their attention like a cistern beneath it and thus allow nothing that flows forth to escape. . . . If any pupil be found who is not paying attention he should
be reprimanded or punished on the spot. In this way the scholars will be made keen and attentive.

The use of varied sources of information, as opposed to depending entirely on the knowledge of the teacher, caused a change in methods of teaching. The emphasis shifted from centering on the teacher to the indiscriminate use of study materials.

Others believed that the object of study was to discipline the mind, and that it mattered little what was studied if the material was difficult and abstract. Crawford (43, p. 2) wrote, "Many people still declare that it makes little difference what is studied provided it is difficult and unpleasant enough to give the student genuine exercise in surmounting obstacles." He also stated,

A large number of well-informed persons still think that the study of any subject brings about a sort of general mental development which makes it easier to cope with any situation, even though that situation be radically different in nature from the subject studied.

Another interpretation of this same idea was that study was thought of as the process by which minds of pupils could be stored with a large amount of knowledge or information which somehow or other they would be able to use in future years. Thus, study became largely a process of memorizing.

As more research and experimentation was done it became apparent that the act or process of studying was more complicated and involved than was originally envisioned. It was realized that the use of effective study skills was a
determining factor in the academic success of students. According to Gerken (68, p. 41), "The better your study techniques, the more you will learn, and the better prepared you will be to use what you learn." Carter (31) reported that tests devised reveal consistent and reliable differences in the self-reported study methods of good students as opposed to those who are unsuccessful in school.

Cole and Ferguson (38), Wrightstone (145, p. 3), and Kammann (85, p. 77) concur with these statements, adding that there is a positive correlation between good study habits, skills, and attitudes and success in school work. Pry (118, p. 147) summarizes it with, "As long as schools have been in existence, the avenue to better grades has always been through the medium of effective study habits."

Stokes (133, p. 165) stated that good study habits are imperative "tools" of learning and could be used in any content subject for individual and group guidance. Sharp (127, p. 271) comments on the serious problems caused universities and colleges by students who fail because of inadequate study habits.

Studies have also been conducted which show that environment has a great deal to do with how well students are able to study. Clayton (36), Strang and Sturtevant (134), and Heck (76) in examining home conditions and study habits of children found a great variety of home conditions, many of which were not conducive to effective study. They also found
that the study habits used by the students at home were often wasteful and ineffective. Reavis (121) reached this same conclusion and indicated a more effective procedure could be found through supervised study.

Burr (27) reported many schools furnishing pupils with printed cards or directions on study. This, however, proved to be ineffective, according to Burton (29, p. 327). "Many elementary and secondary pupils, receiving no explanations or assistance, merely pasted the rules in textbooks or desk covers and forgot them."

Nason (110), in an analysis of the academic achievement of gifted high school students, found that if all other factors were equal, high interest and aspirational level seemed to account for high achievement. On the other hand, Gerberich (67), in studying the factors relating to the college achievement of high-aptitude students who failed of expectations, found that the low scholarship group not only had difficulty in paying attention in class, but also had difficulty in using effective study techniques. Burton (29, p. 333) states that "ample evidence shows that difficulty with study is not at all confined to the dull, the lazy, and the uninterested. Many of the bright, willing, and interested students need much specific, detailed help with study skills."

Charters (34, 35), in studying the methods of study used by 258 junior college women, concluded that there was a pressing need for direction of study.
Supervised Study

Recognition of the importance of teaching these needed study skills resulted in a variety of experiments in school programs to provide supervision of students while studying. These supervised study programs also provided an opportunity to partially answer the criticism reported by McMurry (98) that too many classrooms are still teacher-dominated, with the teacher doing most of the thinking and work and the students in a secondary role of merely following directions.

Cole (39) reported one of the early attempts at supervised study, in which an effort was made to supervise or direct home study by means of definite instructions in procedures and specific tasks to be accomplished. In an evaluation of this attempt, there was reported a decrease in failures and eliminations from school.

Since this early attempt many additional experimental programs have been reported. Concerning these programs, Hines (78) listed eight types of school organizations for supervised study and Brownell (25) reports thirty different techniques which claim the name "supervised study." Brownell isolated fourteen different techniques that were used in various school systems. In most cases these techniques dealt with administrative attempts to provide a definite time and place for study. In these were divided periods, special study halls, daily extra periods, supervised home study, conference plans, and study coaches.
Young and Simpson (146) reported on one technique which divided the period into five minutes for recapitulation, two minutes for a statement of the business of the day, twenty-five minutes for class discussion, five minutes for giving the assignment, and twenty-five minutes for a study period. Wiener (140) and Erickson (59) reported a plan to provide thirty minutes for recitation and thirty minutes for supervised study.

Martin (100) studied 6,000 school marks made after five years of the sixty-minute divided-period technique and found an increase in percentage of students promoted.

Merriam (102) reported a slight variation of this technique, in which two-thirds of the period was used for recitation and one-third of the period was used to give the assignment.

Brown (23), Allen (1), Proctor (117), and Robert (123) reported on double periods, which varied from two forty-five minute periods to two sixty-minute periods equally divided between recitation and supervised study. Each report indicated results which showed a decrease in failures and eliminations from school and an increase in promotions.

Lull (95) and Brueckner (26) reported on more flexible types of the divided period plan, in that the division of the class periods for the purposes of recitation and supervised study was left to the discretion of the teacher; however, in
Lull's report, each teacher reported weekly the percentage of time spent in supervision of study activities.

Rynearson (126) records the practice of giving an extra hour per week in the Pittsburg High School prior to the day a major assignment is due. Willett (141), Nielson (111), and Loveland (94) list practices which add to this by giving one extra hour per day for the purpose of supervised study. In Loveland's report, this period was optional for students making 90 per cent or better.

Stetson (132) suggested a variable plan in which the seventh grade pupils were given thirty minutes of a period for recitation and thirty for study; in the eighth grade the ratio of time for recitation to study was 35:25; and in the ninth grade the ratio was 40:20. In grades ten to twelve the ratio was 45:15. Beginning with the ninth grade, provisions were made for a "consultation period" of thirty minutes a day to take care of the backward. Davis (47) supports this idea in his statement that supervised study should be concentrated in the junior high school and the amount of such study reduced progressively in the later years.

Another technique for giving supervised study, known as the Batavia Plan, is reported by Kennedy(87). In this plan, if rooms contain fifty or more pupils, two teachers are present, with one giving class instruction continuously to classes reciting alternately and the other giving individual attention all the time to slow and backward children. In
rooms containing fewer than fifty children, only one teacher was present. All teachers were to give half the period to the needs of individuals.

Lyman (96) proposed the abandonment of traditional methods of classroom recitation, lesson-hearing, quizzing, and time-killing silent study, and suggested four lines of improvement.

1. To supervise and direct the pupils while they teach themselves.
2. To use the classroom as a workshop.
3. To enrich and individualize assignments.
4. To provide problem-solving situations.

He felt that class time should be used for starting new work, much of it individual, for carrying out that work with the teacher's help, and for giving publicity to that work when completed.

Yet another plan was reported by Spohn (131), in which the study halls and departmental libraries were combined. Regular teachers served as study supervisors in these rooms. Hanes (72) and Harris (73) also support this idea of having each department supply teachers to supervise students during study.

Several plans have been reported in supervising specific subject matter areas, with all of the plans using some variation of the division of the class period into recitation and supervised study. Among these are Heckert (77) in
English, Breed (17) in English, Latin, and algebra, Butterweck (30) in geometry and general science, Brown and Worthington (24) in algebra, history, and English, Miller and Johnson (103) in geometry and French, Breslich (18) in mathematics, Minnich (104) in geometry, Bixler (10) in commercial geography, Fish (62), Armstrong (2), and Barr (4) in history, and Beauchamp (5, 6) in science. With very few exceptions these studies all reported better results obtained through the supervised study techniques, as opposed to strictly formal recitations.

Proponents of the supervised study plan make various claims for superiority over the more traditional type of teaching. Breslich (19) found that home conditions were not always conducive to effective study and that directed school study produced measurably superior results.

Proctor (116) circulated a ten-item questionnaire to 1,661 high school pupils and concluded that a large amount of school study, where study is supervised by the classroom teacher, under some form of the double or lengthened period plan, is accompanied by a proportionately small amount of necessary home study.

Mitchell (105, p. 385) states, "Perhaps no innovation in school life in recent years offers more promise for the advancement of good teaching than supervised study."

According to Reavis (120, p. 419), "No technique of teaching has yet been devised which is so flexible and so
adaptable to the proper instruction of individuals in groups as supervised study."

Although Koos (89) points out that the tendency to question the value of supervised study is on the decline, other writers tend to question the effectiveness of supervised study in several areas. Morrison (107), for example, states that the effectiveness of supervised study depends on the attitude and skill of the teacher and pupil alike.

Shreve (129, p. 38) concludes, "... it is self-evident that a pupil has to learn to spell or count." Her investigations of the study habits of high school pupils from Richmond, Virginia, show that they are not learning to study under the old home-study and recitation regime and that there is therefore a need for instruction in how to study. She adds, however, "On the basis of measurable results no large claims can be made for supervised study. The statistical data have been found to be very unreliable and the experimental data meager and conflicting."

White (139) studied the effect of supervised study in high schools of Kansas on success in the University of Kansas. He concluded that in view of the facts revealed for the 270 cases considered, the supervised study had only a very small advantage in meeting the demands made by the University of Kansas in the matter of marks.

Book (15, p. 465) states,
Too often the efforts of teachers have degenerated into a series of mere devices which aim to help students make better grades in their work instead of developing habits of thought and work that would enable them to perform all their tasks in the most efficient and economical way.

Burr (28) visited over twenty of the best high schools in Wisconsin and Illinois to observe supervised study in action. He reached the following conclusions:

1. In more than one-half of the classrooms in supervised-study schools the teachers used all of the period for recitation or for purposes other than study.

2. Neither teachers nor principals seemed to have worked out a technique for the best use of the study period.

3. Recitation in schools using the supervised study plan was poorer than in traditional schools.

Carter (33) charges that many principals and superintendents have adopted supervised study plans before teachers have been apprised of the techniques necessary for making it successful.

Douglas (52) observed the study practices of 395 boys and girls in five high schools and concluded that teaching students how to study was of no particular importance in that it did not affect their marks.

Flemming and Woodring (63) discussed the difficulties met by 230 high school teachers in directing study and listed
the following problems:

1. Problems which arise from inadequate knowledge or skill on the part of the teacher, including such as insufficient knowledge and use of the psychology of learning, difficulties in making adequate assignments, insufficient time in the teacher's schedule for pupil diagnoses and remedial work, insufficient information about individual pupils, lack of teacher preparation for diagnosis and remedial instruction, and inability of teachers to give training in specific study skills.

2. Factors and conditions which directly involve the pupil, including home conditions for study, conditions for study at school, physical conditions of pupil, mental ability as a factor in learning, attitudes and interests, and methods of work.

Mason (101) lists the following disadvantages of supervised study:

1. Lack of proper techniques on the part of the teacher.
2. Teachers using the whole period for recitation.
3. Teachers using the extra study time for themselves.

Judd (84, p. 436) states, "Teachers know their subject content but do not know how to teach students to study."

Woodring and Flemming (142) analyzed the problems listed by 230 teachers engaged in junior and senior high school instruction and found that 65 per cent of them reported their
most difficult problem was in directing the study of high school pupils, and that this problem had arisen from their own lack of knowledge of the psychology of learning. They further add that a question which constantly recurs in the minds of these teachers is how these study procedures can be taught.

Study Manuals

To offset this growing criticism of supervised study and to supplement the efforts to teach study skills, several study manuals have been written. In most instances these manuals list in detail those desirable study habits that have been found helpful in doing acceptable school work. Some of the manuals were written for the purpose of aiding students, while others were directed toward helping teachers in their efforts to supervise the study of students.

Some writers such as Reavis (122) and Lahoe (91) offered merely a blank study card with encouragement to students to make their own study program and devise their own study techniques. This idea might work well for the more able students, but for those who were in need of direction, it was of little practical value.

Laycock and Russell (93) analyzed thirty-eight how-to-study manuals written between 1926 and 1939. Their analysis revealed an emphasis on reading habits and skills, preparing for and taking examinations, general habits of learning,
notetaking, classroom activities, using the library, memorizing, and the physical and psychological conditions for studying. They concluded that the next steps in the "How to Study" programs should include research in the following:

1. The teachability of specific skills
2. Instruments for evaluating the study habits of individual pupils
3. Methods for diagnosing possible causes of inefficiency in study
4. Remedial exercises for pupils whose study skills are inadequate.

Kornhauser's (90) forty-three-page handbook, written for the use of students in college and high schools, included general directions on study, the acquisition of good habits, and specific directions for the improvement of reading.

A guide written by Coleman and Libau (40) specifically for students contained the following topics:

1. How to learn
2. Taking exams
3. Writing research papers
4. Using the library
5. Reading
6. Study habits
7. SQ3R method of study
8. How to mark a book
Other guides by Dudycha (53), Morgan and Deese (106), Gerken (69), Wrenn (143, 144), Tussing (136), Robinson (124), and Cole and Ferguson (38) added only three topics not already listed. These were budgeting of time, outlining, and working conditions for study.

In addition to the study manuals, many articles have been written giving suggestions or tips on successful study. Among these are Lawton's (92), listing twenty tips for high school students, Kneller's (88), giving ten methods, and Clifford's (37), with ten suggestions.

While all of these hints, suggestions, or helps were probably beneficial in some instances, Dynes (54), by means of a study habit checklist, found that high school students, left to their own initiative, will use the procedure which appeals to them individually. He also found that most of the students preferred to read and re-read material until they were able to reproduce it.

Other articles or guides written specifically for college students were prepared by Bennett (8), Bird (9), Crawley (44), Fedde (61), Jones (82), Lyman (97), Werner (138), Hatfield (74), and Headley (75). These articles or guides contained the same suggestions as those for high school students plus some additional items centered around college life and activities.

Articles or guides written for teachers contain materials similar to those written for students, as well as
suggested teaching techniques or administrative plans for helping students to master the desired study skills.

Edwards (57) included practical suggestions for improving conditions of study. Earhart (55) listed seventeen suggestions on teaching children to study. Mursell (108), Preston (115), and Farquhar, Krumbaltz, and Wrenn (60) published books that have been used as textbooks for how-to-study courses in college.

Brink (20, p. 31), in evaluating the effects of books, manuals, and articles on how to study, makes this statement: "The rapid accumulation of evidence clearly indicates that merely apprising pupils of desirable study methods and giving them outlines of supposedly effective study procedures are hopelessly inadequate."

According to Davis (48), rules for study which have been emphasized by writers in this field have little scientific foundation in that these rules have dealt chiefly with external conditions, good health, and appropriate amounts of sleep and relaxation rather than with the procedures used to assimilate and comprehend learning materials. He further adds, "In any case, instruction in how to study has been an incidental and haphazard process."

Brownell (25, p. 10) writes,

In educational literature, the techniques of administration, distribution of time within the period, disposition of the recitation and the like,
are much discussed while matters regarding the actual help in study, which is the reform demanded, receives only incidental treatment.

While these statements tend to be somewhat critical of the efforts in supervised study or in printing study manuals, it cannot be assumed that these efforts were completely ineffective. These statements emphasize the need for these skills and the fact that continued efforts must be made to teach needed study skills.

Carter (32), after analyzing the differences in methods of study reported by high-achieving and low-achieving students, concluded that the development of effective study techniques is apparently more complicated than often supposed.

Cooper (41) does not believe pupils should be told how to study and the reasons therefor, but should be shown the best way of doing the task. Bond (14, p. 397) states, "Today there are few secondary schools teaching students sound study skills in a systematic manner. One reason for this serious deficiency is the fact that teachers themselves do not know sound study skills and thus cannot be expected to teach them to their students."

Study Skills Classes

The fact that effective study skills are imperative for a student to be successful has been well established. Philomene (113, p. 272) says, "A prerequisite of efficient
study is a mastery of the skills to be used in the learning situation." Cristantiello and Cribbin (45) warns that a deficiency of study skills sentences a student either to undue hardship or to outright failure. Hadley (71, p. 353) adds that "aside from foundations in written expression and computation skills, probably the most important assets a student has when he enters college are his academic work habits and study skills." Donald (51, p. 58) writes, "In addition to being able to read well, a student must have sound study skills if he is to be successful academically."

Marksheffel (99, p. 212) and Brown (21, p. 40) agree that study skills must be taught and that few students will learn how to study efficiently without directed practice and guidance by a teacher.

Howell (79), p. 384) says,

Children must be taught the techniques underlying work-study skills if more satisfactory scholastic achievement is to be attained. Many failures among school children can be attributed to poor and inefficient habits of study. Too often teachers, administrators, and supervisors take it for granted that children, during the process of maturation, gather the skills essential for good habits of study without any concerted effort to include this important training in the curriculum. Seldom if ever are the techniques of how to study included in the day-to-day or week-by-week lesson plans of the teacher in the subject-matter areas where this is necessarily applicable.

The question of the value of teaching specific study skills classes as a supplement to supervised study has been studied since the early nineteen hundreds. According to
Brown (22, p. 180), some educators tend to confuse supervised study with teaching pupils how to study. The latter relates to how, the first to the actual doing. He concludes that to teach pupils how to study is time well spent. This in no way de-emphasizes the value of supervised study; it merely re-emphasizes the necessity for teaching how to study.

Research in the teaching of study skills classes for elementary and secondary school students has not been reported nearly so extensively as that at the college level. In her book published in 1929, Muse (109, p. 12) comments,

Elementary schools and high schools are only just beginning to realize the necessity of training children in good study habits. According to the most optimistic prophecies, it will be yet another decade before we can hope that the average high school graduate will have received adequate instruction and training in efficient methods of acquiring new information and skills.

She feels that the study methods of students should never be left to mere chance.

Gatchel (66) reported the results of a how-to-study course given in 1929 to eighty-five ninth, tenth, and eleventh grade students of low and medium mentality in the Sequoia Union High School at Redwood, California. Although the experiment was limited to eight weeks, pupils who received instruction in how to study made significant gains in nearly all subjects they were carrying, over those who did not receive such help.

A desire for better articulation between high schools and colleges resulted in how-to-study courses being taught.
in several secondary schools in Buffalo in 1935. The courses were for one-half unit of high school credit and contained the following topics:

1. The value of good study habits and of a good high school record
2. The techniques of notetaking
3. The improvement of reading ability
4. The theory of habit formation and how to apply it
5. The improvement of memory
6. Problem solving, reflective thinking, and the scientific attitude
7. Methods of preparing for and taking written examinations
8. The use of the library.

In reporting this study, Wagner and Straubel (137) commented that although it might not be clear whether the courses acted only as a motivational factor bringing the pupils to do better school work or whether the courses actually made the higher marks easier to get, it was evident that as a result of the courses the pupils did superior academic work both qualitatively and quantitatively.

During this same year Behrens (7) reported a similar study involving 292 students enrolled in a non-credit study skills course meeting for five days per week for one semester. He found that students in the experimental group made better grades than those in the control group.
DiMichael (49, 50) reported on a study skills course offered for two forty-five minute classes per week for twenty-seven sessions. In this study 192 ninth grade students were matched on intelligence test scores, mental age, chronological age, sex, class year, and curriculum. He reached the following conclusions:

1. The course was of value to the middle group of mental ability.

2. Students of very poor ability did not profit noticeably.

3. It was of no demonstrable value for students in the highest one-fourth of the class.

4. Ninth grade students do not seem to possess satisfactory knowledge of effective study skills.

5. The how-to-study course as taught could be expected to increase substantially the knowledge of good study skills.

Sparks (130), in reporting on a thirty week voluntary study skills program geared for the college-bound students of Beverly Hills High School, judged the course a success based on the fact that a long list of students were waiting to enter it. Hurt (80) evaluated a six-weeks study skills course offered to thirty-one ninth grade students and concluded the course was successful in that the enrollment in this course jumped to seventy-six students the second year.
Glock and Millman (70) cooperated in a study to determine the immediate and long-term effectiveness of an instructional program designed to help above-average high school juniors acquire skills in reading, writing, listening, and study techniques. In this study regular classes went to English five days per week while eighty-two students in the experimental group met in English three days per week and two days in study skills classes. Glock and Millman found no immediate beneficial results and concluded that the study did not support the offering of required study skills courses.

In a study to develop and evaluate a handbook for teaching work-study skills, Babcock (3) used sixteen teachers in four school districts in Kansas. He gave the Iowa Every Pupil Test of Basic Skills, Work-Study Skills Section, form L, as a pre-test to 410 pupils in September, and form M of this test as a post-test in April. His conclusion was that it is possible to improve the work-study skills of boys and girls through the use of learning experiences especially designed for the teaching of work-study skills.

Entwisle (58, p. 248) in evaluating twenty-two skills courses stated, "Some kind of improvement does occur and high school students of intermediate ability seem to profit most."

Some observations made by Entwisle were these:

1. A course will be most beneficial for students desiring to take it.
2. A study-skills course will usually be followed by improvement.

3. Students wishing to take a study-skills course but prevented from doing so and therefore presumably of comparable motivation to those enrolled, fail to show significant improvement.

4. Any gains noted will not necessarily be related to either the content or duration of the course.

One of the twenty-two study skills courses reported by Entwisle was conducted at the secondary school level. The other twenty-one were at the college level, which indicates the degree to which colleges and universities are exploring the idea of teaching specific study skills classes.

In 1926, Crawford (42) reported the results of a how-to-study course given at the University of Idaho during the first semester of the 1925-1926 school year for 181 students. Two lectures per week were given and an evaluation of the course was made, based on average grades, the number of students winning high honors, and the number of failures. Results showed that the study skills participants made better grades, included fewer students on probation, and had fewer failures than the rest of the student body.

The University of Buffalo found it necessary in 1927 to give doubtful or inferior students three weeks of training in study skills on a tuition basis prior to their actual entrance into college. Eckert and Jones (56) and Jones (83,
p. 191) reported on this study and Jones contended, "It should not be the business of a college to teach study habits, rapid reading, etc., but these should be handled by the grammar school and high school."

In 1928, Pressey (114) reported on an experiment in which training in study skills was given to fifty students on probation but not to a control group of similar individuals. Three and one-half years later, 58 per cent of the trained group had either left college with satisfactory grades or were still in college with passing marks. Only 18 per cent of the untrained group did as well. Of the trained group, 20 per cent graduated, but not one in the untrained group persisted that far.

Ranson (119), in evaluating the reading and study program of the University of Missouri from 1947 to 1952, found that students taking the course improved their grade point averages for the semester and for the year more than did the control group.

In reporting on the study skills course offered at the University of Wyoming from 1949 to 1951, Shaw (128) found that grades improved by .56 of a grade point over work taken before the study-skills course. He also observed that the control group showed a steady decline in grade averages until they participated in the course. Ninety-five per cent of students participating in the course expressed the opinion that the course was of considerable value to them.
Blake (12), in evaluating the University of Maryland compulsory study and reading skills course offered in 1952 and 1953, concluded that the academic success of the probationers was considerable and that their success was at least partly due to the training provided in the course.

Danskin and Burnett (46, p. 185), in reporting on an Ohio State University program for superior students, states,

The fact that students in this study who made good grades did so with average or below average learning techniques seems to indicate that the knowledge and use of higher level work skills would enable them to attain greater scholastic achievement.

This would tend to support the idea that how-to-study courses at the college level should not be limited to students with low academic standing.

Patterson (112) conducted an experiment in reading and study habits, with emphasis on mathematics and science, in West Chester State College. Participants were second semester freshmen who were given two hours credit for the course. His conclusion was that reading and study skills could be significantly improved, particularly in mathematics and science.

Fox (64) evaluated a six-session study skills program for college freshmen in chemistry and reached the conclusion that a short-term traditional reading and study skills program had no significant effect on students, chemistry grades, or grade point averages.
Book (16, p. 529), in 1927 reported,

It is the practice of many universities to dismiss from one-fifth to one-third of its freshman classes each year because of their inability to do their academic work. That colleges recognize the need for careful direction and specific supervision of the efforts and work of college freshmen is shown by the fact that most colleges and universities are giving some form of special orientation or "How to Study" courses for their freshmen.

Frederick, Ragsdale, and Salisburg (65) list several universities, among them Ohio State, Buffalo, and Minnesota, which have instituted courses in methods of study for freshmen. They also noted that the Oregon Principals' Association in 1933 recommended a course in how to study for all high schools.

According to Blake (11, 13), college-level study skills programs are becoming more numerous. He found that 90 percent of the colleges in the United States offer some kind of study skills course and that twenty-four institutions were planning such programs for the near future. In seven colleges, 1,400 students were enrolled in programs of this type, and all programs in which evaluations had been undertaken reported favorable results. In 1956, Cristantiello and Cribbin (45) discovered from the results of an eleven-item questionnaire sent to thirty-nine colleges in New York, New Jersey, Pennsylvania, Connecticut, and the District of Columbia, that eleven of the thirty respondents offered a formal course in the improvement of study skills and all thirty
offered some kind of help to students in their efforts to
develop study techniques.

The majority of the research and writing on study skills
courses seems to indicate that they present a definite help
in teaching study skills. The National Association of
Secondary School Principals' Bulletin (135) states that the
junior high schools must assume the major task of helping
pupils develop the attitudes and skills of independent study.
Yet as James (81, p. 44) states, "As with any educational
effort, not all students will respond to efforts to teach
them study skills, but the alternative of leaving all to
chance is unsound, wasteful, even tragic."

Roos (125, p. 80) sums it up aptly with his statement,
"Let us refuse to say, 'He doesn't know how to study,' as an
excuse for our failure, and set about to 'teach him how to
study' within the proper range of his composite ability at
the level where we teach."

Summary

This review of related literature points to the
practice of supplementing supervised study in the classroom
with specific courses designed to teach study skills. There
is a definite lack of controlled experimentation in this
area at the secondary school level even after many years of
successful application in the colleges and universities.
Evaluations of the study skills courses reported in the
literature were made on the basis of the performance of participants as measured by achievement test scores and grades, and not on the ability of participants to use the specific skills studied.
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CHAPTER III

METHOD OF COLLECTING DATA

Population

The participants in this study were ninth grade students in one junior high school in a North Texas community of 30,000 population. The school community was composed of families that represented the entire strata of socio-economic levels with no particular group being predominant.

Experimental Design

From a ninth grade enrollment of 332 students, 150 elected the study skills and reading, writing, and listening skills course. These 150 students were paired on the basis of sex and intelligence test scores making seventy-five matched pairs. One member of each pair was enrolled in one of the three study skills and reading, writing, and listening skills classes. The other members of each pair were enrolled in one of three World Geography classes. Each of the six classes was taught for one semester, five days per week, fifty-five minutes per period. The Study Skills classes were scheduled for the first, third, and fifth periods of a six-period day and the World Geography classes were scheduled for the second, fourth, and sixth periods.
Students satisfactorily completing either of the courses were granted one-half credit toward graduation from high school.

Instruments Used

Alternate forms of the following measuring instruments were administered to both the experimental and control groups at the beginning of the 1968-1969 school year.

1. **Spitzer Study Skills Test.**--A measure of ability to use skills that are fundamental to success in many areas of the high school and college curriculums.
   Five subtests measure five important skills:
   (1) Using the dictionary
   (2) Using the index
   (3) Understanding graphs, tables, and maps
   (4) Knowledge of sources of information
   (5) Organization of facts in note taking.
   A reliability of from .88 to .90 was established for this test based on the testing of students from four different communities.

2. **Sequential Tests of Educational Progress.**--These tests emphasize abilities to utilize learned skills in solving new problems and not the ability to recall facts or materials studied prior to the time of testing.
   A. **Sequential Tests of Educational Progress**--Reading testing the following reading skills:
      1. Ability to understand direct statements made by the author
2. Ability to interpret and summarize the passage
3. Ability to observe the organizational characteristics of the passage
4. Ability to see the motives of the author
5. Ability to criticize the passage with respect to its ideas, purposes, or presentations.

B. Sequential Tests of Educational Progress--Writing
   testing the following writing skills:
1. The ability to express oneself logically in writing
2. The ability to organize materials in the whole passage, in the paragraph, and in the sentence
3. The ability to write appropriately to the purpose, the occasion, the audience
4. The ability to write effectively: word choice, emphasis details, reasons, examples, comparisons, exactness, and clarity, simplicity, economy, variety, imagination, and force
5. The ability to use the conventions of writing: in basic form mechanics, in syntax mechanics, in word-form mechanics.

C. Sequential Tests of Educational Progress.--Listening
   testing the following listening skills:
1. Plain-sense comprehension
   a. To identify main ideas
   b. To remember the significant details
c. To remember the structure or simple sequence of ideas
d. To demonstrate understanding of denotative meanings of important words.

2. Interpretation
   a. To understand the implication of the main ideas
   b. To understand the implication of significant details
   c. To understand interrelationships among ideas and to understand the organizational pattern well enough to predict what is likely to follow
   d. To demonstrate understanding of connotative meanings of words.

3. Evaluation and application
   a. To judge the validity and adequacy of the main idea
   b. To judge the extent to which the supporting details accomplish their purposes
   c. To evaluate the organization and development of what is said
   d. To judge whether or not the speaker has created an intended mood or effect
   e. To recognize what the speaker wants the listener to do and to recognize ways in which
the speaker's ideas may be applied properly in new situations.

The median reliabilities for the **Sequential Tests of Educational Progress**—Reading-Writing-Listening tests are .915, .865, and .895, respectively.

**Teaching Procedure**

The teacher involved in this study had eighteen years of teaching experience at the elementary and junior high levels. She taught and was qualified to teach in self-contained classrooms, as well as science, reading, both basal and remedial, social studies, and English at the junior high level. She held the Bachelor of Science and Master of Teaching degrees.

Conferences were held with the teacher prior to the beginning of the 1968-1969 school year to acquaint her with the courses of study and teaching materials to be used in the study skills and reading, writing, and listening skills classes and World Geography classes. Additional conferences were held every two weeks and more often when necessary. Classroom observations were made in each study skills class each week.

Students in the experimental and control groups were administered the **Spitzer Study Skills Test**, form AM, and the Reading, Writing, and Listening sections of the **Sequential Tests of Educational Progress**, form 3A, on Tuesday and Wednesday of the second week of the 1968-1969 school year, as a pre-test. Necessary make-up tests were given on Monday and Tuesday of the following week.
Following seven weeks of study skills instruction, form B3 of the Spitzer Study Skills Test was administered to the experimental and control groups. At the end of the semester, the Reading, Writing, and Listening sections of the Sequential Tests of Educational Progress, form 3B, were administered to the experimental and control groups. The study skills test was given at the end of the study skills unit in order that the effects of this instruction might be evaluated before the reading, writing, and listening units were taught.

The pre-testing and post-testing was conducted by the teacher of the Study Skills and World Geography classes, with the school counselors assisting. Students were assembled in the cafeteria for testing so that identical working time and instructions would be given to each student. An analysis of the testing procedure used in this study revealed that the students did not do their best work under these testing conditions. They tended to become uninterested after relatively short periods of testing and were too easily distracted. Two full days of continuous testing should not be attempted.

Units of Study

The eighteen weeks of instruction for the experimental group were divided into eight units of work. The following charts give an outline of the materials used, topics covered, and time spent on each unit, and are followed by a list and sources of materials used in the units of study.
### Materials Used

<table>
<thead>
<tr>
<th>Topic</th>
<th>Chapters and Pages</th>
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| I. "How to Study and Why" | (3)*<br>a. "Why Study"
| | b. "How to Do Homework"
| II. "How to Study" | (5)<br>a. "Why Study"
| | b. "Your Attitude"
| | c. "Plan Your study"
| | d. "Study Setting"
| | e. "Feel Bogged Down"
| | f. "Learning Is by Doing"
| III. "Developing Your Study Skills" | (1B)<br>Skills necessary for effective study
| IV. "Listen and Read Program" | (4)<br>a. "Check Your Study Habits #11"
| | b. "How to Study With SQ3R" #12
| V. How to Study (6A) | a. "Planning Your Time for Study" Chapter 1, pp. 11-21
| | b. "The Physical Setting for Your Study" Chapter 11, pp. 22-29
| VI. How to Study (6P) | Specific helps for study
| VII. How to Be a Better Student | (6R)<br>a. "Why Become a Better Student" Chapter 1, pp. 3-9.
| | c. "How Can You Get Ready to Study" Chapter 4, pp. 23-27

*Chapter Bibliography number
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<tr>
<td>I. &quot;How to Study and Why&quot; (3)</td>
<td>&quot;How to Take Notes&quot;</td>
</tr>
<tr>
<td>II. &quot;Listen and Read Program&quot; (4)</td>
<td>&quot;The Art of Notetaking,&quot; #14</td>
</tr>
<tr>
<td>III. How to be a Better Student (6R)</td>
<td>&quot;How Do You Take Notes and Make Outlines?&quot; Chapter 11, pp. 73-76</td>
</tr>
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| IV. "How to Study" (5) | a. "Note-taking"  
b. "Note-taking Tips"  
c. "Structure of Notes"  
d. "More Notes on Note-taking"  
e. "Best Note Style" |
| V. How to Study (6A) | "Mastery Techniques," Chapter 3, pp. 30-53  
(1). "Note-taking"  
(2). "Notes Are Cues"  
(3). "Purpose of Note-taking"  
(4). "Note-taking Tasks" |
| VI. "Study Skills Library" (2A) | Oral reports and note-taking on selected materials contained in the science and social studies libraries |
## UNIT THREE
### USE OF THE LIBRARY
#### TWO WEEKS

<table>
<thead>
<tr>
<th>Materials Used</th>
<th>Topics Covered</th>
</tr>
</thead>
</table>
| **I. "Study Skills Library" (2A)** | a. "Reader's Guide"  
b. "Encyclopedia"  
c. "Atlas"  
d. "Dewey Decimal System"  
e. "Card Catalogue"  
f. "Bibliography"  
g. "Almanac"  
h. "Index"  
i. "Dictionary"  
j. "Graphs"  
(1). "Picture"  
(2). "Bar"  
(3). "Line"  
(4). "Circle" |
| **II. Be a Better Reader (6M) (5N) (60)** | a. "How to Find Things in Dictionaries and Encyclopedias," Book I, Unit 8, page 108  
b. "Dictionary Skills," Book II, Unit 7, p. 97, & Book III, Unit 7, p. 102  
c. "How to Find Things in the Library," Book I, Unit 8, p. 109, & Book III, Unit 7, p. 104  
d. "Reading Graphs," Book I, Unit 6, p. 80 |
| **III. Advanced Skills in Reading (6H)** | "Locating Information Efficiently," Chapter 6, pp. 159-179 |
| **IV. How to Study (6A)** | "Browse in the Library"  
Chapter 4, pp. 62-64 |
| **V. How to Be a Better Student (6R)** | "How You Use the Library Efficiently," Chapter 10, pp. 66-72 |
UNIT FOUR
STUDYING FOR AND TAKING TESTS
ONE AND ONE-HALF WEEKS

<table>
<thead>
<tr>
<th>Materials Used</th>
<th>Topics Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. How to Study (6A)</td>
<td>&quot;Getting Ready for and Taking Examinations,&quot; Chapter 5, pp. 77-98</td>
</tr>
<tr>
<td>II. How to Be a Better Student (6R)</td>
<td>&quot;How Can You Best Prepare For and Take Tests,&quot; Chapter 14, pp. 92-96</td>
</tr>
<tr>
<td>III. &quot;Effective Study Guide&quot; (6B)</td>
<td>&quot;Analyze Examination Taking Problems,&quot; Lesson 12, pp. 33-35</td>
</tr>
<tr>
<td>IV. How to Study (5)</td>
<td>&quot;Going to Take a Test&quot;</td>
</tr>
<tr>
<td>V. How to Study and Why (3)</td>
<td>&quot;How to Get Better Marks on Exams&quot;</td>
</tr>
</tbody>
</table>

UNIT FIVE
TEACHING READING SKILLS
SIX WEEKS

<table>
<thead>
<tr>
<th>Materials Used</th>
<th>Topics Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Advanced Skills in Reading (6H)</td>
<td>a. &quot;Tuning up For Five Reading Speeds,&quot; Chap. 5, pp. 125-157</td>
</tr>
</tbody>
</table>
### UNIT FIVE Continued

<table>
<thead>
<tr>
<th>Materials Used</th>
<th>Topics Covered</th>
</tr>
</thead>
</table>
| **II. Advanced Skills in Reading (6G)** | a. "Reading for Details," Chap. 5, pp. 125-142  
b. "Reading for Deeper Meaning," Chap. 6, pp. 143-159  
d. "The Table of Contents and the Index," Chap. 8, pp. 185-203  
e. "Reading with Greater Appreciation," Chap. 11, pp. 269-289 |
b. "Reading for Comprehension," Book II, p. 44; Book III, p. 62  
c. "Speeding Up," Book II, p. 127; Book III, p. 120  
d. "Finding the Main Idea in Paragraphs," Book I, p. 58; Book II, pp. 43, 44, 158; Book III, p. 31  
e. "Drawing Conclusions," Book II, pp. 59, 128; Book III, pp. 48, 76, 78 |
b. "Wording Topics," p. 91  
c. "Reading Signals," p. 103 |
| **V. Listen and Read Program (4)** | a. "Shifting Gears in Reading," #18  
b. "Skimming and Scanning," #19  
c. "The Reading Habit," #20  
d. "Reading Between the Lines," #21  
e. "Compressing Ideas by Abbreviations and Summarizing," #17 |
### UNIT FIVE Continued

<table>
<thead>
<tr>
<th>Materials Used</th>
<th>Topics Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>VI. How to Be A Better Student (6R)</td>
<td>&quot;How Do You Read Special Materials?&quot; Chap. 8, pp. 51-59</td>
</tr>
</tbody>
</table>
| VII. Study Skills Library (2A) | a. "Parts of a Book"  
b. "Table of Contents"  
c. "Index"  
d. "Title Page"  
e. "Glossary"  
f. "Preface"  
g. "Acknowledgement Page"  
h. "Copyright Notice" |
| VIII. SRA IIIB Reading Laboratory | Selected reading |

### UNIT SIX

FOLLOWING DIRECTIONS, LISTENING AND OUTLINING  
TWO WEEKS

<table>
<thead>
<tr>
<th>Materials Used</th>
<th>Topics Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Advanced Skills in Reading (6F)</td>
<td>&quot;Following Directions,&quot; pp. 121-132</td>
</tr>
<tr>
<td>II. How to Study and Why (3)</td>
<td>&quot;How to Listen&quot;</td>
</tr>
</tbody>
</table>
| III. Listen and Read Program (4) | a. "How Well Do You Listen," #1  
b. "Listening and Reading," #2  
c. "Outlining--Finding the Skeleton in Listening and Reading," #15  
d. "Following the Author's Organization," #10 |
### UNIT SIX Continued

<table>
<thead>
<tr>
<th>Materials Used</th>
<th>Topics Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV. How to Be a Better Student (6R)</td>
<td>&quot;How Well Can You Listen,&quot; Chap. 5, pp. 28-31</td>
</tr>
<tr>
<td>V. Advanced Skills in Reading (6H)</td>
<td>&quot;Outlining for Comprehension and Study,&quot; Chap. 9, pp. 245-277</td>
</tr>
</tbody>
</table>

### UNIT SEVEN

**WRITING SKILLS**

**TWO WEEKS**

<table>
<thead>
<tr>
<th>Materials Used</th>
<th>Topics Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Better Work Habits (6L)</td>
<td>&quot;Writing,&quot; pp. 181-221</td>
</tr>
<tr>
<td>II. Advanced Skills in Reading (6H)</td>
<td>&quot;Sentence Meaning at a Glance,&quot; Chap. 1, pp. 11-41</td>
</tr>
<tr>
<td>IV. How to Be a Better Student (6R)</td>
<td>&quot;How Well Can You Write?&quot; Chap. 6, pp. 32-41</td>
</tr>
<tr>
<td>V. How to Study and Why (3)</td>
<td>&quot;How to Write Clearly&quot;</td>
</tr>
<tr>
<td>VI. Listen and Read Program (4)</td>
<td>&quot;Spotting Topics in Paragraphs,&quot; #8</td>
</tr>
</tbody>
</table>
UNIT EIGHT
SUMMARY AND POST-TESTING
ONE WEEK

Summary of units five, six, and seven and post-testing using the Sequential Tests of Educational Progress--Reading-Writing-Listening.

In each of the eight units taught the materials listed were supplemented with additional materials, used at the teacher's discretion, to provide for the individual needs of the pupils enrolled in the course.

Statistical Treatment of the Data

Hypotheses one, five, nine, and thirteen were tested by making statistical analyses of the mean variances for the experimental and control groups on the two administrations of the Spitzer Study Skills Test and the Reading, Writing, and Listening sections of the Sequential Tests of Educational Progress.

Hypotheses two, six, ten, and fourteen were tested by making statistical analyses of the mean variances for the boys in the experimental and control groups on the two administrations of the Spitzer Study Skills Test and the Reading, Writing, and Listening sections of the Sequential Tests of Educational Progress.

Hypotheses three, seven, eleven, and fifteen were tested by making statistical analyses of the mean variance for the
girls in the experimental and control groups on the two administrations of the Spitzer Study Skills Test and the Reading, Writing, and Listening sections of the Sequential Tests of Educational Progress.

Hypotheses four-A, eight-A, twelve-A, and sixteen-A were tested by making statistical analyses of the mean variances on the two administrations of the Spitzer Study Skills Test and the Reading, Writing, and Listening sections of the Sequential Tests of Educational Progress for the students in the experimental group with intelligence test scores in the upper and middle thirds of the group.

Hypotheses four-B, eight-B, twelve-B, and sixteen-B were tested by making statistical analyses of the mean variances on the two administrations of the Spitzer Study Skills Test and the Reading, Writing, and Listening sections of the Sequential Tests of Educational Progress for the students in the experimental group with intelligence test scores in the upper and lower thirds of the group.

Hypotheses four-C, eight-C, twelve-C, and sixteen-C were tested by making statistical analyses of the mean variances on the two administrations of the Spitzer Study Skills Test and the Reading, Writing, and Listening sections of the Sequential Tests of Educational Progress for the students in the experimental group with intelligence test scores in the middle and lower thirds of the group.
The statistical analyses were made using the standard error of difference formula.

The five per cent level of significance was used to determine the acceptance or rejection of each of the hypotheses.
LIST AND SOURCES OF MATERIALS USED IN UNITS OF STUDY

1. Filmstrips


2. Laboratories


3. Records


4. Tapes


5. Transparencies


6. Books and Pamphlets


CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

This study was designed to determine the effects of teaching study skills and reading, writing, and listening skills as a specific course of study for ninth grade students. The experimental and control groups for this study were matched on the basis of desire to take the course, intelligence test scores, and sex. Each group included fifty boys and twenty-five girls. The intelligence test scores for the experimental group ranged from a high of 127 to a low of 56, with a mean score of 95.99. In the control group, the intelligence test scores ranged from a high of 129 to a low of 52, with a mean score of 95.59. Using Fisher's $t$ formula, a $t$ score of 1.66 was obtained, which indicates that the difference in intelligence test scores for the two groups was not significant at the .05 level.

Comparisons of pre-test and post-test scores, using the standard error of difference formula, were made for the experimental and control groups, the boys in the two groups, the girls in the two groups, and the upper, middle, and lower thirds of the experimental group.

The upper third of the experimental group had a range of intelligence test scores from 127 to 103, with a mean score of 113.48. The middle third had a range of scores from 103 to
89, with a mean score of 96.60. The lower third had a range of scores from 87 to 56, with a mean score of 77.88.

The assumption was made at the beginning of this study that matching students based on desire to take the course, intelligence test scores, and sex would provide comparable students for the experimental and control groups. The Spitzer Study Skills Test and the Reading, Writing, and Listening sections of the Sequential Tests of Educational Progress, (S.T.E.P.), were administered as pre-tests to the experimental and control groups. Comparisons between the mean test scores for the experimental and control groups on these tests were made to determine whether the differences were significant at the .05 level. Fisher's $t$ formula was again used in making this comparison. The mean test scores for the two groups, the mean of the difference, and the $t$ scores derived for each of the four tests used in this study are listed in Table I.

### Table I

<table>
<thead>
<tr>
<th>Test</th>
<th>Experimental Group Mean</th>
<th>Control Group Mean</th>
<th>Mean of the Difference</th>
<th>$t$ Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spitzer Study Skills</td>
<td>58.27</td>
<td>57.87</td>
<td>.4</td>
<td>.18</td>
</tr>
<tr>
<td>S.T.E.P. Reading</td>
<td>36.69</td>
<td>35.44</td>
<td>1.36</td>
<td>1.13</td>
</tr>
<tr>
<td>S.T.E.P. Writing</td>
<td>28.08</td>
<td>26.60</td>
<td>1.45</td>
<td>1.40</td>
</tr>
<tr>
<td>S.T.E.P. Listening</td>
<td>46.84</td>
<td>44.76</td>
<td>2.16</td>
<td>1.53</td>
</tr>
</tbody>
</table>
None of the \( t \) scores were significant at the .05 level, therefore the assumption made was considered valid.

Mean test scores, standard deviations, and levels of significance are given in Table II for the boys and girls in the experimental group.

**TABLE II**

**COMPARISON OF INITIAL MEAN TEST SCORES FOR THE BOYS AND GIRLS IN THE EXPERIMENTAL GROUP ON THE SPITZER STUDY SKILLS TEST AND THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS--READING-WRITING-LISTENING**

<table>
<thead>
<tr>
<th>Test</th>
<th>Group</th>
<th>Mean Test Score</th>
<th>Standard Deviation</th>
<th>Significance of Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spitzer Study Skills</td>
<td>Boys</td>
<td>52.68</td>
<td>17.10</td>
<td>.004</td>
</tr>
<tr>
<td></td>
<td>Girls</td>
<td>64.84</td>
<td>20.40</td>
<td></td>
</tr>
<tr>
<td>S.T.E.P. Reading</td>
<td>Boys</td>
<td>34.37</td>
<td>9.34</td>
<td>.07</td>
</tr>
<tr>
<td></td>
<td>Girls</td>
<td>38.21</td>
<td>10.72</td>
<td></td>
</tr>
<tr>
<td>S.T.E.P. Writing</td>
<td>Boys</td>
<td>25.89</td>
<td>7.78</td>
<td>.03</td>
</tr>
<tr>
<td></td>
<td>Girls</td>
<td>30.08</td>
<td>10.03</td>
<td></td>
</tr>
<tr>
<td>S.T.E.P. Listening</td>
<td>Boys</td>
<td>46.39</td>
<td>13.20</td>
<td>.57</td>
</tr>
<tr>
<td></td>
<td>Girls</td>
<td>45.21</td>
<td>13.99</td>
<td></td>
</tr>
</tbody>
</table>

Significant differences in initial mean test scores were found in study skills and writing skills.

During the first six weeks of the 1968-1969 school year, three students withdrew from school, leaving seventy-two matched pairs taking both the pre-test and post-test, using the Spitzer Study Skills Test, forms AM and BM.
Hypothesis one stated that there would be no significant difference between the mean gain made by the experimental group of the Spitzer Study Skills Test and the mean gain made by the control group.

The mean gains for the experimental and control groups on the two administrations of the study skills test are given in Table III.

**TABLE III**

**COMPARISON OF MEAN GAINS FOR THE EXPERIMENTAL AND CONTROL GROUPS ON THE SPITZER STUDY SKILLS TEST**

<table>
<thead>
<tr>
<th></th>
<th>Experimental Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Students Taking Test</td>
<td>72</td>
<td>72</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>10.20</td>
<td>6.46</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>1.57</td>
<td>1.29</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>2.03</td>
<td></td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>1.84</td>
<td></td>
</tr>
<tr>
<td>Level of Significance</td>
<td>.034</td>
<td></td>
</tr>
</tbody>
</table>

The difference in gains, 1.84 in standard error units, signified the chances were 29.5 to 1 that the methods of instruction for the experimental group were more beneficial in the area of study skills than those used with the control group. The difference between the mean gain made by the experimental group in study skills, as measured by the Spitzer Study Skills Test, and the mean gain made by the control group was significant at the .034 level, and hypothesis one was rejected.
Hypothesis two stated that there would be no significant difference between the mean gain made by the boys in the experimental group on the Spitzer Study Skills Test and the mean gain made by the boys in the control group.

The mean gains for the boys in the experimental and control groups on the two administrations of the study skills test are reported in Table IV.

<table>
<thead>
<tr>
<th></th>
<th>Experimental Boys</th>
<th>Control Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Students Taking Test</td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>12.62</td>
<td>5.62</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>2.10</td>
<td>1.70</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>2.70</td>
<td></td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>2.59</td>
<td></td>
</tr>
<tr>
<td>Level of Significance</td>
<td></td>
<td>.005</td>
</tr>
</tbody>
</table>

The difference in gains, 2.59 in standard error units, signified the chances were 207 to 1 that the methods of instruction in the area of study skills for the boys in the experimental group were more beneficial than those used for the boys in the control group. The difference between the mean gain made by the boys in the experimental group in study skills, as measured by the Spitzer Study Skills Test, and the mean gain made by the boys in the control group was significant at the .005 level, and hypothesis two was rejected.
In hypothesis three it was stated that there would be no significant difference between the mean gain made by the girls in the experimental group on the Spitzer Study Skills Test and the mean gain made by the girls in the control group.

The mean gains for the girls in the experimental and control groups on the two administrations of this test are reported in Table V.

<table>
<thead>
<tr>
<th>TABLE V</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMPARISON OF MEAN GAINS FOR THE GIRLS IN THE EXPERIMENTAL AND CONTROL GROUPS ON THE SPITZER STUDY SKILLS TEST</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Experimental Girls</th>
<th>Control Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Students Taking Test</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>5.64</td>
<td>8.04</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>2.28</td>
<td>2.08</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>2.18</td>
<td></td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>1.10</td>
<td></td>
</tr>
<tr>
<td>Level of Significance</td>
<td>1.16</td>
<td></td>
</tr>
</tbody>
</table>

This difference in gains, 1.10 in standard error units, signified that the chances were 6.4 to 1 that the methods of instruction for the girls in the control group were more beneficial in the area of study skills than those used for the girls in the experimental group. The difference between the mean gain made by the girls in the experimental group in study skills, as measured by the Spitzer Study Skills Test, and the mean gain made by the girls in the control group was
significant at the .16 level, and hypothesis three was accepted.

Hypothesis four-A stated that there would be no significant difference between the mean gain made on the Spitzer Study Skills Test by the students in the experimental group with intelligence test scores which placed them in the upper third of the experimental group and the mean gain made by the students with intelligence test scores which placed them in the middle third of the experimental group.

The mean gains for these two groups on the two administrations of this test are reported in Table VI.

TABLE VI

COMPARISON OF MEAN GAINS FOR THE UPPER AND MIDDLE THIRD OF THE EXPERIMENTAL GROUP ON THE SPITZER STUDY SKILLS TEST

<table>
<thead>
<tr>
<th></th>
<th>Upper Third</th>
<th>Middle Third</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students Taking Test</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>9.96</td>
<td>9.76</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>2.84</td>
<td>2.24</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>3.62</td>
<td></td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>Level of Significance</td>
<td>.91</td>
<td></td>
</tr>
</tbody>
</table>

This difference in gains, .06 in standard error units, signified the chances were 1.10 to 1 that the methods of instruction in study skills were more beneficial to the upper third of the experimental group than to the middle third. The difference between the mean gain made by the upper third of
the experimental group in study skills, as measured by the Spitzer Study Skills Test, and the mean gain made by the middle third of the experimental group was significant at the .91 level, and hypothesis four-A was accepted.

Hypothesis four-B stated that there would be no significant difference between the mean gain made on the Spitzer Study Skills Test by the students in the experimental group with intelligence test scores which placed them in the upper third of the experimental group and the mean gain made by the students with intelligence test scores which placed them in lower third of the experimental group.

The mean gains for these two groups on the two administrations of this test are given in Table VII.

TABLE VII

<p>| COMPARISON OF MEAN GAINS FOR THE UPPER AND LOWER THIRDS OF THE EXPERIMENTAL GROUP ON THE SPITZER STUDY SKILLS TEST |
|--------------------------------------------------|----------------|----------------|</p>
<table>
<thead>
<tr>
<th>Number Students Taking Test</th>
<th>Upper Third</th>
<th>Lower Third</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Gain</td>
<td>9.96</td>
<td>10.96</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>2.84</td>
<td>3.03</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>4.15</td>
<td>.24</td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>.68</td>
<td></td>
</tr>
</tbody>
</table>

This difference in gains, .24 in standard error units, signified that the chances were 1.47 to 1 that the methods of instruction in study skills were more beneficial to the lower
third of the experimental group than for the upper third.
The difference between the mean gain made by the upper third
of the experimental group in study skills, as measured by
the **Spitzer Study Skills Test**, and the mean gain made by the
lower third was significant at the .68 level, and hypothesis
four-B was accepted.

Hypothesis four-C stated that there would be no signi-
ficant difference between the mean gain made on the **Spitzer
Study Skills Test** by the students in the experimental group
with intelligence test scores which placed them in the middle
third of the experimental group and the mean gain made by the
students with intelligence test scores which placed them in
the lower third of the experimental group.

The mean gains for these two groups on the two adminis-
trations of this test are reported in Table VIII.

**TABLE VIII**

| COMPARISON OF MEAN GAINS FOR THE MIDDLE AND LOWER
THIRD OF THE EXPERIMENTAL GROUP ON THE
SPITZER STUDY SKILLS TEST |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td>Number Students Taking Test</td>
</tr>
<tr>
<td>Mean Gain</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
</tr>
<tr>
<td>Level of Significance</td>
</tr>
</tbody>
</table>

This difference in gains, .32 in standard error units,
signified that the chances were 1.67 to 1 that the methods of
instruction in study skills were more beneficial for the lower third of the experimental group than for the middle third. The difference between the mean gain made by the middle third of the experimental group in study skills, as measured by the Spitzer Study Skills Test, and the mean gain made by the lower third of the experimental group was significant at the .60 level, and hypothesis four-C was accepted.

The mean gains made by the various groups compared on the Spitzer Study Skills Tests, listed in order of level of significance, are given in Table IX.

TABLE IX

COMPARISON OF MEAN GAINS FOR ALL GROUPS ON THE SPITZER STUDY SKILLS TEST

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean Gain</th>
<th>Difference in Gains in Standard Error Units</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Boys</td>
<td>12.62</td>
<td>2.59</td>
<td>.005</td>
</tr>
<tr>
<td>Control Boys</td>
<td>5.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>10.20</td>
<td>1.84</td>
<td>.034</td>
</tr>
<tr>
<td>Control</td>
<td>6.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Girls</td>
<td>5.64</td>
<td>1.10</td>
<td>.16</td>
</tr>
<tr>
<td>Control Girls</td>
<td>8.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle Third</td>
<td>9.76</td>
<td>.32</td>
<td>.60</td>
</tr>
<tr>
<td>Lower Third</td>
<td>10.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Third</td>
<td>9.96</td>
<td>.24</td>
<td>.68</td>
</tr>
<tr>
<td>Lower Third</td>
<td>10.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Third</td>
<td>9.96</td>
<td>.06</td>
<td>.91</td>
</tr>
<tr>
<td>Middle Third</td>
<td>9.76</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In the preceding table, differences significant at the .05 level or above are noted between the mean gain made on the Spitzer Study Skills Test by the boys in the experimental group compared with the mean gain made by the boys in the control group, and the mean gain made by the experimental group compared with the mean gain made by the control group.

A comparison of pre-test results on the Spitzer Study Skills Test showed a significant difference between mean test scores for the boys and girls in the experimental group. The difference in mean test scores for the boys and girls in the experimental group on the post-test was not significant at the .05 level.

During the seventh through the eighteenth weeks of the first semester of the 1968-1969 school year, two students withdrew from school, leaving seventy matched pairs taking both the pre-test and post-test using the Reading, Writing, and Listening sections of the Sequential Tests of Educational Progress, forms 3A and 3B.

Hypothesis five stated that there would be no significant difference between the mean gain made by the experimental group on the Sequential Tests of Educational Progress—Reading and the mean gain made by the control group.

The mean gains for the experimental and control groups on the two administrations of the reading test are listed in Table X.
TABLE X

COMPARISON OF MEAN GAINS FOR THE EXPERIMENTAL AND
CONTROL GROUPS ON THE SEQUENTIAL TESTS
OF EDUCATIONAL PROGRESS--READING

<table>
<thead>
<tr>
<th></th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Students Taking Test</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>2.30</td>
<td>.27</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>.99</td>
<td>.87</td>
</tr>
</tbody>
</table>

Standard Error of Difference in Gains ........ 1.32
Difference in Gains in Standard Error Units .... 1.54
Level of Significance ................. .066

The difference in gains, 1.54 in standard error units, signified the chances were 15.2 to 1 that the methods of instruction for the experimental group were more beneficial in the area of reading than those used with the control group. The difference in mean gain made by the experimental group in reading, as measured by the Sequential Tests of Educational Progress--Reading, and the mean gain made by the control group was significant at the .066 level, and hypothesis five was accepted.

Hypothesis six stated that there would be no significant difference between the mean gain made by the boys in the experimental group on the Sequential Tests of Educational Progress--Reading and the mean gain made by the boys in the control group.

The mean gains for the boys in the experimental and control groups on the two administrations of the reading test are reported in Table XI.
TABLE XI

COMPARISON OF MEAN GAINS FOR THE BOYS IN THE EXPERIMENTAL AND CONTROL GROUPS ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS--READING

<table>
<thead>
<tr>
<th></th>
<th>Experimental Boys</th>
<th>Control Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Students Taking Test</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>1.89</td>
<td>.15</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>1.48</td>
<td>1.10</td>
</tr>
</tbody>
</table>

Standard Error of Difference in Gains ... 1.84
Difference in Gains in Standard Error Units ... .95
Level of Significance ... .21

The difference in gains, .95 in standard error units, signified the chances were 4.85 to 1 that the methods of instruction for the boys in the experimental group were more beneficial in the area of reading than those used with the boys in the control group. The difference in mean gain made by the boys in the experimental group in reading, as measured by the Sequential Tests of Educational Progress--Reading, and the mean gain made by the boys in the control group was significant at the .21 level, and hypothesis six was accepted.

The mean gains for the girls in the experimental and control groups on the two administrations of the Sequential Tests of Educational Progress--Reading are reported in Table XII.
### TABLE XII

**COMPARISON OF MEAN GAINS FOR THE GIRLS IN THE EXPERIMENTAL AND CONTROL GROUPS ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS--READING**

<table>
<thead>
<tr>
<th></th>
<th>Experimental Girls</th>
<th>Control Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Students Taking Test</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>3.04</td>
<td>.50</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>.94</td>
<td>1.34</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>1.64</td>
<td>1.55</td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>1.55</td>
<td>.065</td>
</tr>
<tr>
<td>Level of Significance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The difference in gains, 1.55 in standard error units, signified the chances were 15.5 to 1 that the methods of instruction for the girls in the experimental group were more beneficial in the area of reading than those used with girls in the control group. The difference in mean gain made by the girls in the experimental group in reading, as measured by the *Sequential Tests of Educational Progress--Reading*, and the mean gain made by the girls in the control group was significant at the .065 level, and hypothesis seven was accepted.

Hypothesis eight-A stated that there would be no significant difference between the mean gain made on the *Sequential Tests of Educational Progress--Reading* by the students in the experimental group with intelligence test scores which placed them in the upper third of the experimental group and the mean gain made by the students with intelligence test scores
which placed them in the middle third of the experimental group.

The mean gains made on the two administrations of the reading test by the upper and middle thirds of the experimental group are reported in Table XIII.

**TABLE XIII**

**COMPARISON OF MEAN GAINS FOR THE STUDENTS IN THE UPPER THIRD AND MIDDLE THIRD OF THE EXPERIMENTAL GROUP ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS--READING**

<table>
<thead>
<tr>
<th></th>
<th>Upper Third</th>
<th>Middle Third</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Students Taking Test</td>
<td>24</td>
<td>23</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>4.84</td>
<td>2.18</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>1.04</td>
<td>1.83</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>2.11</td>
<td></td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>1.26</td>
<td>.12</td>
</tr>
<tr>
<td>Level of Significance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The difference in gains, 1.26 in standard error units, signified the chances were 8.6 to 1 that the methods of instruction in reading were more beneficial for the students in the upper third of the experimental group than for the students in the middle third of the experimental group. The difference between the mean gain made by the students in the upper third of the experimental group in reading, as measured by the *Sequential Tests of Educational Progress*--Reading, and the mean gain made by the students in the middle third of the experimental group was significant at the .12 level, and hypothesis eight-A was accepted.
Hypothesis eight-B stated that there would be no significant difference between the mean gain made on the Sequential Tests of Educational Progress--Reading by the students in the experimental group with intelligence test scores which placed them in the upper third of the experimental group and the mean gain made by the students with intelligence test scores which placed them in the lower third of the experimental group.

The mean gains made on the two administrations of the reading test by the upper and lower thirds of the experimental group are listed in Table XIV.

TABLE XIV

| Comparison of Mean Gains for the Students in the Upper Third and Lower Third of the Experimental Group on the Sequential Tests of Educational Progress--Reading |
|----------------------------------|-----------------|-----------------|
| Number Students Taking Test      | Upper Third     | Lower Third     |
| Mean Gain                        | 4.84            | -.27            |
| Standard Error of Gain           | 1.04            | 2.16            |
| Standard Error of Difference in Gains | 2.40           |
| Difference in Gains in Standard Error Units | 2.13          |
| Level of Significance            |                 | .02             |

The difference in gains, 2.13 in standard error units, signified the chances were 59 to 1 that the methods of instruction in reading were more beneficial for the students in the upper third of the experimental group than for the students in the lower third of the experimental group. The difference between the mean gain made by the students in the
upper third of the experimental group in reading, as measured by the Sequential Tests of Educational Progress--Reading, and the mean gain made by the students in the lower third of the experimental group was significant at the .02 level, and hypothesis eight-B was rejected.

Hypothesis eight-C stated that there would be no significant difference between the mean gain made on the Sequential Tests of Educational Progress--Reading by the students in the experimental group with intelligence test scores which placed them in the middle third of the experimental group and the mean gain made by the students with intelligence test scores which placed them in the lower third of the experimental group.

The mean gains made on the two administrations of the reading test by the middle and lower thirds of the experimental group are reported in Table XV.

**TABLE XV**

<table>
<thead>
<tr>
<th>COMPARISON OF MEAN GAINS FOR THE STUDENTS IN THE MIDDLE THIRD AND LOWER THIRD OF THE EXPERIMENTAL GROUP ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS--READING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle Third</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Number Students Taking Test</td>
</tr>
<tr>
<td>Mean Gain</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
</tr>
<tr>
<td>Level of Significance</td>
</tr>
</tbody>
</table>

The difference in gains, .87 in standard error units signified the chances were 4.20 to 1 that the methods of
instruction in reading were more beneficial for the students in the middle third of the experimental group than for the students in the lower third of the experimental group. The difference between the mean gain made by the students in the middle third of the experimental group in reading, as measured by the Sequential Tests of Educational Progress--Reading, and the mean gain made by the students in the lower third of the experimental group was significant at the .24 level, and hypothesis eight-C was accepted.

The mean gains made by the various groups compared on the Sequential Tests of Educational Progress--Reading listed in order of level of significance are reported in Table XVI.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean Gain</th>
<th>Difference in Gains in Standard Error Units</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Third</td>
<td>4.84</td>
<td>2.13</td>
<td>.02</td>
</tr>
<tr>
<td>Lower Third</td>
<td>-.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Girls</td>
<td>3.04</td>
<td>1.55</td>
<td>.065</td>
</tr>
<tr>
<td>Control Girls</td>
<td>.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>2.30</td>
<td>1.54</td>
<td>.066</td>
</tr>
<tr>
<td>Control</td>
<td>.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Third</td>
<td>4.84</td>
<td>1.26</td>
<td>.12</td>
</tr>
<tr>
<td>Middle Third</td>
<td>2.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Boys</td>
<td>1.89</td>
<td>.95</td>
<td>.21</td>
</tr>
<tr>
<td>Control Boys</td>
<td>.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle Third</td>
<td>2.18</td>
<td>.87</td>
<td>.24</td>
</tr>
<tr>
<td>Lower Third</td>
<td>-.27</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In Table XVI, gains in mean test scores on the Sequential Tests of Educational Progress—Reading were recorded for all groups tested except the lower third of the experimental group. A difference at the .05 level of significance or above was noted in comparing the mean score gains of the upper and lower thirds of the experimental group with the upper third of the experimental group showing the largest mean gain.

A comparison of pre-test results on the Sequential Tests of Educational Progress—Reading showed the difference in mean test scores of the boys and girls in the experimental group was significant at the .07 level, with the girls having the largest mean test score. The difference between mean test scores for the boys and girls in the experimental group on the post-test reached the .03 level of significance, with the girls scoring the largest gain.

Hypothesis nine stated that there would be no significant difference between the mean gain made by the experimental group on the Sequential Tests of Educational Progress—Writing and the mean gain made by the control group.

The mean gains of the students in the experimental group and control group on the two administrations of the writing test are listed in Table XVII.
TABLE XVII

COMPARISON OF MEAN GAINS FOR THE STUDENTS IN THE EXPERIMENTAL AND CONTROL GROUPS ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS--WRITING

<table>
<thead>
<tr>
<th></th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Students Taking Test</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>-1.05</td>
<td>-1.27</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>.81</td>
<td>.71</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>1.08</td>
<td></td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>.20</td>
<td></td>
</tr>
<tr>
<td>Level of Significance</td>
<td>.72</td>
<td></td>
</tr>
</tbody>
</table>

The difference in gains, .20 in standard error units, signified the chances were 1.38 to 1 that the methods of instruction were more beneficial to the experimental group in the area of writing than those used for the control group. The difference between the mean gain made by the students in the experimental group in writing, as measured by the Sequential Tests of Educational Progress--Writing, and the mean gain made by the students in the control group was significant at the .72 level, and hypothesis nine was accepted.

Hypothesis ten stated that there would be no significant difference between the mean gain made by the boys in the experimental group on the Sequential Tests of Educational Progress--Writing and the mean gain made by the boys in the control group.

The mean gains of the boys in the experimental group and the boys in the control group on the two administrations of the writing test are reported in Table XVIII.
TABLE XVIII
COMPARISON OF MEAN GAINS FOR THE BOYS IN THE EXPERIMENTAL AND CONTROL GROUPS ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS—WRITING

<table>
<thead>
<tr>
<th></th>
<th>Experimental Boys</th>
<th>Control Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Students Taking Test</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>-2.28</td>
<td>-2.82</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>.89</td>
<td>.98</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>1.33</td>
<td></td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>.41</td>
<td></td>
</tr>
<tr>
<td>Level of Significance</td>
<td>.52</td>
<td></td>
</tr>
</tbody>
</table>

The difference in gains, .41 in standard error units, signified the chances were 1.93 to 1 that the methods of instruction were more beneficial to the boys in the experimental group in the area of writing than those used for the boys in the control group. The difference between the mean gain made by the boys in the experimental group in writing, as measured by the Sequential Tests of Educational Progress—Writing, and the mean gain made by the boys in the control group was significant at the .52 level, and hypothesis ten was accepted.

Hypothesis eleven stated that there would be no significant difference between the mean gain made by the girls in the experimental group on the Sequential Tests of Educational Progress—Writing and the mean gain made by the girls in the control group.
The difference between the mean gain of the girls in the experimental group and the mean gain of the girls in the control group on the two administrations of the writing test is recorded in Table XIX.

**TABLE XIX**

**COMPARISON OF MEAN GAINS FOR THE GIRLS IN THE EXPERIMENTAL AND CONTROL GROUPS ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS--WRITING**

<table>
<thead>
<tr>
<th></th>
<th>Experimental Girls</th>
<th>Control Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Students Taking Test</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>1.63</td>
<td>1.71</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>1.58</td>
<td>1.47</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>2.16</td>
<td>.04</td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>.04</td>
<td>.93</td>
</tr>
</tbody>
</table>

The difference in gains, .04 in standard error units, signified the chances were 1.07 to 1 that the methods of instruction in the control group were more beneficial in the area of writing for the girls in the control group than were the methods of instruction in writing for the girls in the experimental group. The difference between the mean gain made by the girls in the experimental group in writing, as measured by the **Sequential Tests of Educational Progress--Writing**, and the mean gain made by the girls in the control group was significant at the .93 level, and hypothesis eleven was accepted.

Hypothesis twelve-A stated that there would be no significant difference between the mean gain made on the **Sequential**
Tests of Educational Progress—Writing by the students in the experimental group with intelligence test scores which placed them in the upper third of the experimental group and the mean gain made by the students with intelligence test scores which placed them in the middle third of the experimental group.

The mean gains made on the two administrations of the writing test by the students in the upper and middle thirds of the experimental group are reported in Table XX.

<table>
<thead>
<tr>
<th>Comparison of Mean Gains for the Students in the Upper and Middle Thirds of the Experimental Group on the Sequential Tests of Educational Progress—Writing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Upper Third</strong></td>
</tr>
<tr>
<td>Number Students Taking Test</td>
</tr>
<tr>
<td>Mean Gain</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
</tr>
<tr>
<td>Level of Significance</td>
</tr>
</tbody>
</table>

The difference in gains, .06 in standard error units, signified the chances were 1.10 to 1 that the methods of instruction in writing were more beneficial for the students in the middle third of the experimental group than for the students in the upper third of the group. The difference between the mean gain made by the students in the upper third of the experimental group in writing, as measured by the
Sequential Tests of Educational Progress--Writing, and the mean gain made by the students in the middle third of the experimental group was significant at the .91 level, and hypothesis twelve-A was accepted.

Hypothesis twelve-B stated that there would be no significant difference between the mean gain made on the Sequential Tests of Educational Progress--Writing by the students in the experimental group with intelligence test scores which placed them in the upper third of the experimental group and the mean gain made by the students with intelligence test scores which placed them in the lower third of the experimental group.

The mean gains made on the two administrations of the writing test by the students in the upper and lower thirds of the experimental group are shown in Table XXI.

TABLE XXI

COMPARISON OF MEAN GAINS FOR THE STUDENTS IN THE UPPER AND LOWER THIRDS OF THE EXPERIMENTAL GROUP ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS--WRITING

<table>
<thead>
<tr>
<th></th>
<th>Upper Third</th>
<th>Lower Third</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Students Taking Test</td>
<td>24</td>
<td>23</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>-.34</td>
<td>-2.65</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>1.29</td>
<td>1.60</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>2.05</td>
<td></td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>1.13</td>
<td></td>
</tr>
<tr>
<td>Level of Significance</td>
<td>.15</td>
<td></td>
</tr>
</tbody>
</table>
The difference in gains, 1.13 in standard error units, signified the chances were 6.7 to 1 that the methods of instruction in writing were more beneficial to the students in the upper third of the experimental group than to the students in the lower third of the group. The difference between the mean gain made by the students in the upper third of the experimental group in writing, as measured by the Sequential Tests of Educational Progress--Writing, and the mean gain made by the students in the lower third of the experimental group was significant at the .15 level, and hypothesis twelve-B was accepted.

Hypothesis twelve-C stated that there would be no significant difference between the mean gain made on the Sequential Tests of Educational Progress--Writing by the students in the experimental group with intelligence test scores which placed them in the middle third of the experimental group and the mean gain made by the students with intelligence test scores which placed them in the lower third of the experimental group.

The mean gains on the two administrations of the Sequential Tests of Educational Progress--Writing made by the students whose intelligence test scores placed them in the middle and lower thirds of the experimental group are reported in Table XXII.
TABLE XXII

COMPARISON OF MEAN GAINS FOR THE STUDENTS IN THE MIDDLE AND LOWER THIRDS OF THE EXPERIMENTAL GROUP ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS--WRITING

<table>
<thead>
<tr>
<th></th>
<th>Middle Third</th>
<th>Lower Third</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Students Taking Test</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>-.22</td>
<td>-2.65</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>1.34</td>
<td>1.60</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>2.09</td>
<td>Difference in Gains in Standard Error Units</td>
</tr>
<tr>
<td>Level of Significance</td>
<td>.14</td>
<td></td>
</tr>
</tbody>
</table>

The difference in gains, 1.16 in standard error units, signified the chances were 7.1 to 1 that the methods of instruction in writing were more beneficial to the students in the middle third of the experimental group than to the students in the lower third of the group. The difference between the mean gain made by the students in the middle third of the experimental group in writing, as measured by the Sequential Tests of Educational Progress--Writing, and the mean gain made by the students in the lower third of the experimental group was significant at the .14 level, and hypothesis twelve-C was accepted.

The mean gains made by the various groups compared on the Sequential Tests of Educational Progress--Writing, listed in order of level of significance, are listed in Table XXIII.
### TABLE XXIII
MEAN GAIN AND LEVEL OF SIGNIFICANCE OF GROUPS ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS -- WRITING

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean Gain</th>
<th>Difference in Gains in Standard Error Units</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle Third</td>
<td>-.22</td>
<td>1.16</td>
<td>.14</td>
</tr>
<tr>
<td>Lower Third</td>
<td>-2.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Third</td>
<td>-.34</td>
<td>1.13</td>
<td>.15</td>
</tr>
<tr>
<td>Lower Third</td>
<td>-2.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Boys</td>
<td>-2.28</td>
<td>.41</td>
<td>.52</td>
</tr>
<tr>
<td>Control Boys</td>
<td>-2.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>-1.05</td>
<td>.20</td>
<td>.72</td>
</tr>
<tr>
<td>Control</td>
<td>-1.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Third</td>
<td>-.34</td>
<td>.06</td>
<td>.91</td>
</tr>
<tr>
<td>Middle Third</td>
<td>-.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Girls</td>
<td>1.63</td>
<td>.04</td>
<td>.93</td>
</tr>
<tr>
<td>Control Girls</td>
<td>1.71</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

None of these differences were significant at the .05 level.

A comparison of pre-test results on the Sequential Tests of Educational Progress -- Writing showed the difference in mean test scores of the boys and girls in the experimental group was significant at the .03 level. The difference in mean test scores of the boys and girls on the post-test was significant at the .0007 level, with the girls scoring a
slight gain, while the boys scored a slight decrease in the final mean score.

Hypothesis thirteen stated that there would be no significant difference between the mean gain made by the experimental group on the Sequential Tests of Educational Progress—Listening and the mean gain made by the control group.

The mean gains of the students in the experimental and control groups on the two administrations of the listening test are reported in Table XXIV.

<table>
<thead>
<tr>
<th></th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students Taking Test</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>-1.96</td>
<td>-3.02</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>.95</td>
<td>.80</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>1.24</td>
<td></td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>.85</td>
<td></td>
</tr>
<tr>
<td>Level of Significance</td>
<td></td>
<td>.25</td>
</tr>
</tbody>
</table>

The difference in gains, .85 in standard error units, signified the chances were 4.06 to 1 that the methods of instruction were more beneficial to the students in the experimental group in the area of listening than those used with the students in the control group. The difference between the mean gain made by the students in the experimental
group in listening, as measured by the *Sequential Tests of Educational Progress*—Listening, and the mean gain made by the students in the control group was significant at the .25 level, and hypothesis thirteen was accepted.

Hypothesis fourteen stated that there would be no significant difference between the mean gain made by the boys in the experimental group on the *Sequential Tests of Educational Progress*—Listening and the mean gain made by the boys in the control group.

The mean gains for the boys in the experimental and control groups on the two administrations of the listening test are shown in Table XXV.

<table>
<thead>
<tr>
<th>TABLE XXV</th>
<th>COMPARISON OF MEAN GAINS FOR THE BOYS IN THE EXPERIMENTAL AND CONTROL GROUPS ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS—LISTENING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Students Taking Test</strong></td>
<td><strong>Experimental Boys</strong></td>
</tr>
<tr>
<td><strong>Mean Gain</strong></td>
<td>-2.09</td>
</tr>
<tr>
<td><strong>Standard Error of Gain</strong></td>
<td>1.57</td>
</tr>
<tr>
<td><strong>Standard Error of Difference in Gains</strong></td>
<td>1.86</td>
</tr>
<tr>
<td><strong>Difference in Gains in Standard Error Units</strong></td>
<td>.34</td>
</tr>
<tr>
<td><strong>Level of Significance</strong></td>
<td>.58</td>
</tr>
</tbody>
</table>

The difference in gains, .34 in standard error units, signified the chances were 1.73 to 1 that the methods of instruction used with the boys in the experimental group were
more beneficial in the area of listening than those used with the boys in the control group. The difference between the mean gain made by the boys in the experimental group in listening, as measured by the *Sequential Tests of Educational Progress*—Listening, and the mean gain made by the boys in the control group was significant at the .58 level, and hypothesis fourteen was accepted.

Hypothesis fifteen stated that there would be no significant difference between the mean gain made by the girls in the experimental group on the *Sequential Tests of Educational Progress*—Listening and the mean gain made by the girls in the control group.

The mean gains of the girls in the experimental and control groups on the two administrations of the listening test are listed in Table XXVI.

**TABLE XXVI**

**COMPARISON OF MEAN GAINS FOR THE GIRLS IN THE EXPERIMENTAL AND CONTROL GROUPS ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS—LISTENING**

<table>
<thead>
<tr>
<th></th>
<th>Experimental Girls</th>
<th>Control Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students Taking Test</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>-1.71</td>
<td>-3.63</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>1.48</td>
<td>1.32</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td></td>
<td>1.98</td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>.97</td>
<td></td>
</tr>
<tr>
<td>Level of Significance</td>
<td></td>
<td>.20</td>
</tr>
</tbody>
</table>
The difference in gains, .09 in standard error units, signified the chances were 5.02 to 1 that the methods of instruction used with the girls in the experimental group were more beneficial in the area of listening than those used with the girls in the control group. The difference between the mean gain made by the girls in the experimental group in listening, as measured by the Sequential Tests of Educational Progress--Listening, and the mean gain made by the girls in the control group was significant at the .20 level, and hypothesis fifteen was accepted.

Hypothesis sixteen-A stated that there would be no significant difference between the mean gain made on the Sequential Tests of Educational Progress--Listening by the students in the experimental group with intelligence test scores which placed them in the upper third of the experimental group and the mean gain made by the students with intelligence test scores which placed them in the middle third of the experimental group.

The mean gains on the two administrations of the Sequential Tests of Educational Progress--Listening made by the students whose intelligence test scores placed them in the upper and middle thirds of the experimental group are reported in Table XXVII.
<table>
<thead>
<tr>
<th></th>
<th>Upper Third</th>
<th>Middle Third</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students Taking Test</td>
<td>24</td>
<td>23</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>-2.46</td>
<td>.69</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>1.60</td>
<td>1.73</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>2.35</td>
<td>1.34</td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>1.34</td>
<td>.10</td>
</tr>
<tr>
<td>Level of Significance</td>
<td></td>
<td>.10</td>
</tr>
</tbody>
</table>

The difference in gains, 1.34 in standard error units, signified the chances were 10.1 to 1 that the instruction in listening skills was more beneficial to the students in the middle third of the experimental group than to the students in the upper third of the group. The difference between the mean gain made by the students in the upper third of the experimental group in listening, as measured by the Sequential Tests of Educational Progress--Listening, and the mean gain made by the students in the middle third of the experimental group was significant at the .10 level, and hypothesis sixteen-A was accepted.

Hypothesis sixteen-B stated that there would be no significant difference between the mean gain made on the Sequential Tests of Educational Progress--Listening by the students in the experimental group with intelligence test scores which placed them in the upper third of the experimental group and
the mean gain made by the students with intelligence test scores which placed them in the lower third of the experimental group.

The mean gains made on the two administrations of the listening test by the upper and lower thirds of the experimental group are reported in Table XXVIII.

**TABLE XXVIII**

**COMPARISON OF MEAN GAINS FOR THE UPPER AND LOWER THIRDS OF THE EXPERIMENTAL GROUP ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS--LISTENING**

<table>
<thead>
<tr>
<th></th>
<th>Upper Third</th>
<th>Lower Third</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students Taking Test</td>
<td>24</td>
<td>23</td>
</tr>
<tr>
<td>Mean Gain</td>
<td>-2.46</td>
<td>-4.08</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>1.60</td>
<td>1.55</td>
</tr>
<tr>
<td>Standard Error of Difference in Gains</td>
<td>2.22</td>
<td></td>
</tr>
<tr>
<td>Difference in Gains in Standard Error Units</td>
<td>.73</td>
<td></td>
</tr>
<tr>
<td>Level of Significance</td>
<td>.30</td>
<td></td>
</tr>
</tbody>
</table>

The difference in gains, .73 in standard error units, signified the chances were 3.30 to 1 that the instruction in listening skills was more beneficial to the students in the upper third of the experimental group than to the students in the lower third of the group. The difference between the mean gain made by the students in the upper third of the experimental group in listening, as measured by the **Sequential Tests of Educational Progress**--Listening, and the mean gain made by the students in the lower third of the experimental group was significant at the .30 level, and hypothesis sixteen-B was accepted.
Hypothesis sixteen-C stated that there would be no significant difference between the mean gain made on the Sequential Tests of Educational Progress--Listening by the students in the experimental group with intelligence test scores which placed them in the middle third of the experimental group and the mean gain made by the students with intelligence test scores which placed them in the lower third of the experimental group.

The mean gains made on the two administrations of the listening test by the middle and lower thirds of the experimental group are listed in Table XXIX.

**TABLE XXIX**

**COMPARISON OF MEAN GAINS FOR THE MIDDLE AND LOWER THIRDS OF THE EXPERIMENTAL GROUP ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS--LISTENING**

<table>
<thead>
<tr>
<th>Number of Students Taking Test</th>
<th>Middle Third</th>
<th>Lower Third</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Gain</td>
<td>.69</td>
<td>-4.08</td>
</tr>
<tr>
<td>Standard Error of Gain</td>
<td>1.73</td>
<td>1.55</td>
</tr>
</tbody>
</table>

| Standard Error of Difference in Gains | 2.32 |
| Difference in Gains in Standard Error Units | 2.06 |
| Level of Significance              | .02  |

The difference in gains, 2.06 in standard error units, signified the chances were 50 to 1 that the instruction in listening skills was more beneficial to the students in the middle third of the experimental group than to the students in the lower third of the group. The difference between the
mean gain made by the students in the middle third of the experimental group in listening, as measured by the Sequential Tests of Educational Progress—Listening, and the mean gain made by the students in the lower third of the experimental group was significant at the .02 level, and hypothesis sixteen-C was rejected.

The mean gain made by the various groups compared on the Sequential Tests of Educational Progress—Listening, listed in order of level of significance, is reported in Table XXX.

**TABLE XXX**
MEAN GAIN AND LEVEL OF SIGNIFICANCE OF GROUPS ON THE SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS—LISTENING

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean Gain</th>
<th>Difference in Gains in Standard Error Units</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle Third</td>
<td>.69</td>
<td>2.06</td>
<td>.02</td>
</tr>
<tr>
<td>Lower Third</td>
<td>-4.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Third</td>
<td>-2.46</td>
<td>1.34</td>
<td>.10</td>
</tr>
<tr>
<td>Middle Third</td>
<td>.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Girls</td>
<td>-1.71</td>
<td>.97</td>
<td>.20</td>
</tr>
<tr>
<td>Control Girls</td>
<td>-3.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Control</td>
<td>-1.96</td>
<td>.85</td>
<td>.25</td>
</tr>
<tr>
<td>Control</td>
<td>-3.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Third</td>
<td>-2.46</td>
<td>.73</td>
<td>.30</td>
</tr>
<tr>
<td>Lower Third</td>
<td>-4.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Boys</td>
<td>-2.09</td>
<td>.34</td>
<td>.58</td>
</tr>
<tr>
<td>Control Boys</td>
<td>-2.72</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In the preceding table, a difference at the .05 level of significance or above is noted between the mean gains made on the Sequential Tests of Educational Progress--Listening by the middle and lower thirds of the experimental group with the middle third of the experimental group scoring the greater mean gain.

A comparison of pre-test results on the Sequential Tests of Educational Progress--Listening showed no significant difference in mean test scores of the boys and girls in the experimental group. The difference in mean test scores of the boys and girls on the post-test also showed no significant difference.

The mean score gains on the Spitzer Study Skills Test and the Sequential Tests of Educational Progress--Reading-Writing-Listening for the six groups compared are reported in Table XXXI.

Consistently greater mean score gains in the four areas tested are reported in Table XXXI for the experimental group and the boys in the experimental group than for the control group and the boys in the control group. Differences in mean gains significant at the .05 level or above were noted in (1) study skills, with the experimental group gaining more than the control group and the boys in the experimental group gaining more than the boys in the control group, (2) reading skills, with the upper third of the experimental group gaining more than the lower third of the experimental group,
(3) listening skills, with the middle third of the experimental group gaining more than the lower third of the experimental group.

TABLE XXXI
MEAN SCORE GAINS FOR THE SIX GROUPS COMPARED IN STUDY SKILLS, READING, WRITING, AND LISTENING

<table>
<thead>
<tr>
<th>Groups</th>
<th>Spitzer Study Skills Test</th>
<th>S.T.E.P. Reading</th>
<th>S.T.E.P. Writing</th>
<th>S.T.E.P. Listening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>10.20</td>
<td>2.30</td>
<td>-1.05</td>
<td>-1.96</td>
</tr>
<tr>
<td></td>
<td>6.46</td>
<td>.27</td>
<td>-1.27</td>
<td>-3.02</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>12.62</td>
<td>1.89</td>
<td>-2.28</td>
<td>-2.09</td>
</tr>
<tr>
<td>Control Boys</td>
<td>5.62</td>
<td>.15</td>
<td>-2.82</td>
<td>-2.72</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>5.64</td>
<td>3.04</td>
<td>1.63</td>
<td>-1.71</td>
</tr>
<tr>
<td>Control Girls</td>
<td>8.04</td>
<td>.50</td>
<td>1.71</td>
<td>-3.63</td>
</tr>
<tr>
<td>Upper Third</td>
<td>9.96</td>
<td>4.84</td>
<td>-.34</td>
<td>-2.46</td>
</tr>
<tr>
<td>Middle Third</td>
<td>9.76</td>
<td>2.18</td>
<td>-.22</td>
<td>.69</td>
</tr>
<tr>
<td>Upper Third</td>
<td>9.96</td>
<td>4.84</td>
<td>-.34</td>
<td>-2.46</td>
</tr>
<tr>
<td>Lower Third</td>
<td>10.96</td>
<td>-.27</td>
<td>-2.65</td>
<td>-4.08</td>
</tr>
<tr>
<td>Middle Third</td>
<td>9.76</td>
<td>2.18</td>
<td>-.22</td>
<td>.69</td>
</tr>
<tr>
<td>Lower Third</td>
<td>10.96</td>
<td>-.27</td>
<td>-2.65</td>
<td>-4.08</td>
</tr>
</tbody>
</table>

*Difference in mean gains significant at the .05 level or above.

The losses in mean scores from pre-test to post-test on the writing and listening tests were due in part to the testing procedure. It was found that many of the students involved in this study tended to become discouraged and give up too easily when required to concentrate for extended periods of time.
CHAPTER BIBLIOGRAPHY


CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The majority of the writing and research in the area of study skills has proceeded on the assumption that knowledge in this area is essential to academic success. The major difference noted in the writing and research surveyed was the variety of methods employed to help students acquire these skills. Because of the limited amount of research done in teaching study skills as a subject matter course at the secondary school level, this study was conducted to determine the effects of teaching study skills and reading, writing, and listening skills as a specific course of study for ninth grade students.

One hundred fifty students elected this course for the 1968-1969 school year. These students were paired on the basis of sex and intelligence test scores. One of each pair was scheduled for the study skills and reading, writing, and listening skills course for the first semester of the 1968-1969 school year while the other students making up the matched pairs were scheduled for World Geography.

The experimental and control groups were administered pre-tests during the second week of the first semester of the 1968-1969 school year, using the Spitzer Study Skills Test, form AM, and the Sequential Tests of Educational Progress--
Reading, Writing, and Listening, form 3A. Using Fisher's \( t \) formula, it was determined that there was no significant difference in the performance of these two groups on the tests administered at the beginning of the study.

Following seven weeks of study skills instruction, a post-test, using the *Spitzer Study Skills Test*, form BM, was given to the two groups. After another eleven weeks of instruction in reading, writing, and listening skills, post-tests, using the *Sequential Tests of Educational Progress--Reading-Writing-Listening*, form 3B, were administered to the experimental and control groups.

Comparisons of the mean score gains from the pre-tests and post-tests in study skills and reading, writing, and listening skills were made between the following:

1. The experimental and control groups
2. The boys in the experimental and control groups
3. The girls in the experimental and control groups
4. The students whose intelligence test scores placed them in the upper and middle thirds of the experimental group
5. The students whose intelligence test scores placed them in the upper and lower thirds of the experimental group
6. The students whose intelligence test scores placed them in the middle and lower thirds of the experimental group.
All hypotheses were stated in null form and statistically tested for significance of difference. The standard error of difference formula was used as the statistical test of the level of significance.

Summary of Data and Findings

The differences between the means of pre-test scores for the experimental and control groups in study skills, reading, writing, and listening were statistically tested for significance. No significant differences were found between these groups on their scores on these tests at the beginning of the study.

Following seven weeks of instruction in the area of study skills, significant differences were noted between the mean gain made by the experimental group compared with the mean gain made by the control group, and between the mean gain for the boys in the experimental group compared with the mean gain made by the boys in the control group on the Spitzer Study Skills Test. No significant differences were noted in the other comparisons made. The girls in the control group scored a greater mean gain than the girls in the experimental group. The lower third of the experimental group had a greater mean gain than the upper and middle thirds of the experimental group and the upper third of the experimental group showed a greater mean gain than the middle third of the experimental group. After eleven weeks of instruction in
reading, writing, and listening skills, additional comparisons were made.

In reading, a significant difference was found between the mean gain made by the upper third of the experimental group compared with the mean gain made by the lower third of the group. No significant differences were noted in the other comparisons made. The experimental group had a greater mean gain than the control group. The boys and girls in the experimental group showed a greater mean gain than the boys and girls in the control group. The upper third of the experimental group scored a greater mean gain than the middle and lower thirds of the experimental group and the middle third of the experimental group had a greater mean gain than the lower third of the experimental group.

In the area of writing skills, no significant differences were noted in the comparisons made. The girls in the control group had a greater mean gain than the girls in the experimental group. The control group and the boys in the control group showed a greater mean loss than the experimental group and the boys in the experimental group. The middle third of the experimental group showed a greater mean gain than the upper and lower thirds of the experimental group and the upper third of the experimental group scored a greater mean gain than the lower third of the experimental group.

In listening skills, a significant difference was noted between the mean gain made by the middle third of the
experimental group and the mean loss scored by the lower third of the experimental group. No significant differences were noted in the other comparisons made. The control group and the boys and girls in the control group scored a greater mean loss than the experimental group and the boys and girls in the experimental group. The experimental group divided into thirds on the basis of intelligence test scores listed in order of mean gain were the middle third, upper third, and lower third.

Offering a specific course in study skills and reading, writing, and listening skills resulted in general improvement in these areas by a majority of the experimental groups, and increased substantially the knowledge and use of good study skills.

These findings are consistent with the research and reports of Wagner and Straubel (13), Behrens (2), DiMichael (4, 5), Babcock (1), Entwisle (6), and Patterson (10), which show increased knowledge and use of effective study skills after voluntary participation in special courses designed to teach these skills. Gatchel (8), Crawford (3), Pressey (11), and Ranson (12) further add that increased proficiency in the knowledge and use of effective study skills brought about by such courses results in better grades, fewer failures, and fewer dropouts.

Reports by Glock and Millman (9), and Foxe (7) differed from the findings in this study in that they found no
immediate beneficial results and no significant effects resulting from required participation in special study skills classes.

Conclusions

1. The teaching of study skills as a specific course of study is beneficial for ninth grade students desiring to take such a course.

2. Students with higher intelligence test scores will achieve more in reading skills after receiving specific instruction in these skills than will students with average or below-average intelligence test scores.

3. Instructions in writing and listening skills, as outlined and taught in this study, are of no significant value.

Recommendations

The following recommendations for additional investigations are made, based upon the results of this study:

1. Further experimentation should be done comparing the effects of teaching study skills in grades seven, eight, and nine, to determine the optimum grade level at which such a course might be taught.

2. Experimentation should be conducted in teaching study skills as a special course, as compared to
teaching English with a special emphasis on study skills.

3. The optimum length of time needed for teaching of study skills should be determined by experimentation.

4. Future experimentation in the teaching of study skills and reading, writing, and listening skills as a specific subject should include experimentation in grouping for instruction.

5. Experiments in the effects of teaching study skills should be of sufficient duration to determine if increased competency in these skills is accompanied by improvement in academic performance.
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