

AN ABSTRACT OF THE THESIS OF

TROSTEL GIFFORD WERTH for the ED. D.
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Title: AN ASSESSMENT OF THE RECIPROCAL EFFECT OF HIGH
SCHOOL SENIOR LOW ACHIEVERS TUTORING FRESHMEN
LOW ACHIEVERS IN ENGLISH CLASSES

Abstract approved:



Dr. Jack Hall

Purpose of the Study

The purpose of this study was to compare the effectiveness of a tutoring program and a traditional program in improving achievement for students registered in low achiever English classes in reading comprehension, language usage skills and spelling as well as student interest in the study of English. For this study 128 first-semester students from Gresham and Centennial High Schools, Gresham, Oregon were used. Thirty-two seniors were used to tutor thirty-two freshmen which gave an experimental group of sixty-four. The control group, which did not participate in any tutoring activities, also had sixty-four members, thirty-two freshmen and thirty-two seniors.

All students who participated in this study were given the Diagnostic Reading Tests - Survey Section and California Survey of

Language Achievement as a pretest and posttest. Also each student was given a pre-rating and post-rating of poor, fair, good, or excellent on his interest in English.

Findings

The freshmen who were tutored showed a statistically significant improvement in reading comprehension and interest in the subject of English when compared to the freshmen in the traditional program. Seniors who acted as tutors also showed a significant improvement in interest in the subject of English when compared to the seniors in the traditional program. These findings demonstrated that high school seniors who have been identified as low achievers can provide significant assistance in reading instruction to low achievers in lower grades. The findings further demonstrated that students involved in the tutoring program found it to be a more interesting approach to the study of English than a traditional program.

The analysis of variance failed to show any significant difference between the seniors who acted as tutors and the seniors in the traditional English program in the improvement of reading comprehension, language usage, and spelling skills. Neither was any significant difference found between freshmen who were tutored and the freshmen in the traditional program in improvement in language usage and spelling skills. It would appear from this study that some

of the reciprocal benefits of tutoring which have been reported in other studies are more difficult to produce in high school senior low achievers than in younger students.

Recommendations

In view of the findings of this study the writer offers the following recommendations to schools of education and to public schools concerned with the education of the low achiever.

1. Tutoring studies utilizing statistical treatment should be conducted with low achievers in other subject areas in addition to English.
2. Experimentation should be encouraged in the development of materials to be used in tutoring sessions with low achievers.
3. Institutions involved in preparing teachers should explore methods for helping teachers learn to effectively direct tutorial activities.
4. Further study is needed on the effect acting as a tutor has on self-image for low achieving students.
5. Research in developing standardized tests for the low achieving student should be encouraged.

An Assessment of the Reciprocal Effect of
High School Senior Low Achievers
Tutoring Freshman Low Achievers
in English Classes

by

Trostel Gifford Werth

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Dean of School of Education



Dean of Graduate School

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TABLE OF CONTENTS

<u>Chapter</u>	<u>Page</u>
I. INTRODUCTION	1
Statement of the Problem	3
Significance of the Problem	5
Fundamental Assumptions	9
Limitations of this Study	10
II. REVIEW OF RELATED LITERATURE	11
Summary of Selected Trends in the Teaching of English	11
The Low Achiever and the English Program	17
Summary of Selected Studies on Effects of Tutoring	23
Survey of Selected Tutorial Practices	28
Summary	33
III. DESIGN OF THE STUDY	36
The Setting	36
Procedures Used	38
Description of Testing Instruments and Their Uses in this Study	42
Summary	43
IV. PRESENTATION AND ANALYSIS OF DATA	45
Analysis Procedure	45
Equivalence of Groups	45
Analysis of the Data for Hypotheses One Through Six	46
Analysis of the Data for Hypotheses Seven and Eight	55
Summary	59
V. SUMMARY, ANALYSIS OF FINDINGS, AND RECOMMENDATIONS	61
Summary	61
Analysis of Findings	63

<u>Chapter</u>	<u>Page</u>
Recommendations	70
BIBLIOGRAPHY	72
APPENDIX A	77
APPENDIX B	86
APPENDIX C	92

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. I.Q. Means for Control and Experimental Groups.	46
2. Mean Scores of Seniors for Diagnostic Reading Tests.	48
3. Analysis of Variance of Pretest-Posttest Differences of Reading Test Scores for Seniors.	48
4. Mean Scores of Seniors for Language Tests.	49
5. Analysis of Variance of Pretest-Posttest Differences of Language Test Scores for Seniors.	49
6. Mean Scores of Seniors for Spelling Tests.	51
7. Analysis of Variance of Pretest-Posttest Differences of Spelling Tests Scores for Seniors.	51
8. Mean Scores of Freshmen for Diagnostic Reading Tests.	53
9. Analysis of Variance of Pretest-Posttest Differences of Reading Test Scores for Freshmen.	53
10. Mean Scores of Freshmen Language Tests.	54
11. Analysis of Variance of Pretest-Posttest Differences of Language Test Scores for Freshmen.	54
12. Mean Scores of Freshmen for Spelling Tests.	56
13. Analysis of Variance of Pretest-Posttest Differences of Spelling Test Scores for Freshmen.	56

<u>Table</u>		<u>Page</u>
14.	Mean Scores of Seniors for Teacher Rating on Interest.	58
15.	Mean Scores of Freshmen for Teacher Rating on Interest.	58
16.	Test Scores for Senior Students in Experimental Group.	78
17.	Test Scores for Senior Students in Control Group.	79
18.	Test Scores for Freshmen Students in Experimental Group.	80
19.	Test Scores for Freshmen Students in Control Group.	81
20.	Teacher Ratings on Interest for Senior Students in Experimental Group.	82
21.	Teacher Ratings on Interest for Seniors in Control Group.	83
22.	Teacher Ratings on Interest for Freshmen in Experimental Group.	84
23.	Teacher Ratings on Interest for Freshmen in Control Group.	85

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CHAPTER I

INTRODUCTION

For many years this investigator has had an interest in the low achieving student and after reading and hearing about various kinds of programs which attempted to involve this type student more in his own education, the writer became curious to find out what effect a tutoring program would have where both tutor and the tutored were low achievers.

The purpose of this study was to conduct needed research in the effectiveness of a tutoring program in low achiever English classes. The study was designed to determine whether the proposed student tutoring program of using high school senior low achievers to tutor freshmen low achievers was as effective as a traditional program in improving student achievement in reading comprehension, language usage skills and spelling as well as increasing student interest in the study of English.

To meet the challenge of educating the low achiever in our secondary schools a variety of practices are being tried. Several of these practices recognize the student's need for individual involvement and attempt to provide experiences that are meaningful both in

and out of the regular classroom. One of these developments, tutoring of students by students, appears promising both from the historical point of view as well as from current practice.

In 1806 the first monitorial school was started in the United States. The idea was an importation from England and was sometimes called the Lancasterian school after its originator, Joseph Lancaster (57, p. 439). The heart of the plan was to use students in their teens as teachers of younger boys and girls. The one room school also illustrates a historical setting where upper grade students tutored lower grade students. Time Magazine (48) in reviewing John Holt's latest book, How Children Fail, reported he would place older children in the same classes with younger ones, on the theory that children are much better instructors of other children as well as being less threatening than teachers. Wright (59) in describing a tutoring program of upper graders tutoring primary-grade students claimed that the younger children look up to the tutors like older brothers or sisters and as a result, they are willing to learn. In writing about strategy for curriculum change, Lippitt (30, p. 15) suggests we should think about change in the classroom level in terms of the inside-outside team. He reports finding great support develop from the teaching of reading in a lower class by upper grade students.

This study was concerned principally with a tutoring program

in low achiever English classes in which a major emphasis of the curriculum was on improvement in reading comprehension, language usage, and spelling.

Statement of the Problem

The purpose of this study was to investigate the effectiveness of a tutoring program in low achiever English classes as a teaching tool for improving student achievement in reading comprehension, language skills, and spelling as well as increasing student interest in the study of English. More specifically, this study sought to determine whether the proposed student tutoring program was as effective as a traditional program by proposing the following hypotheses:

1. The tutoring program was as effective for students acting as tutors as was a traditional program in improving reading comprehension of high school seniors taking an English course.
2. The tutoring program was as effective for students acting as tutors as was a traditional program in improving language usage skills of high school seniors taking an English course.
3. The tutoring program was as effective for students acting as tutors as was a traditional program in improving

spelling skills of high school seniors taking an English course.

4. The tutoring program was as effective for students being tutored as was a traditional program in improving reading comprehension of freshmen high school students taking an English course.
5. The tutoring program was as effective for students being tutored as was a traditional program in improving language usage skills of freshmen high school students taking an English course.
6. The tutoring program was as effective for students being tutored as was a traditional program in improving spelling skills of freshmen high school students taking an English course.
7. The tutoring program was as effective for students acting as tutors as was a traditional program in increasing student interest in the study of English for high school seniors taking an English course.
8. The tutoring program was as effective for students being tutored as was a traditional program in increasing student interest in the study of English for freshmen high school students taking an English course.

Significance of the Problem

Woodring (58, p. 53) states:

Every school has some pupils to whom the euphemisms 'slow learners', 'backward', 'retarded', or 'nonverbal' are applied, and the public school committed as it is to providing opportunity for all American youth, cannot escape its responsibility for this group.

National concern for the plight of these youngsters is evidenced in the recently passed Elementary and Secondary Education Act of 1965. This Act not only provides rather staggering amounts of money for school districts to develop programs for these students but suggests that emphasis should be placed on innovative programs. Zacharias (60) in proposing a program of college students tutoring high school students suggests that learning something by helping someone else learn it is a powerful method needing experimentation. He urges a greatly increased involvement in new programs such as learning by teaching. Payne (34, p. 24), in writing about the tutorial program established for Elementary Secondary Education Act, Title I, schools in San Diego says it is still an open question as to the best way to overcome handicaps commonly observed among disadvantaged students. He goes on to propose that a ". . . well organized tutorial program may assume an important place in the final planning for this long sought educational Utopia."

Pearl and Riessman (35, p. 7) suggest that the distinguishing

feature of the modern economic scene is that unskilled labor is ceasing to be a necessary component of functioning society. They state: "Traditionally, the poor have possessed one marketable commodity-- unskilled labor." They also point out the persons without jobs are not difficult to identify. They are the unskilled, the uneducated.

According to Johnson (24, p. 4) approximately twenty-one percent of the schools' population are slow learners while Riessman (37, p. 1) , speaking of the educationally deprived, estimates that by 1970 there may be one deprived child for every two enrolled in schools in large cities. Kemp (26, p. 5) in writing about the youth we have not served states:

Reading, writing and arithmetic are basic to all education. Without these tools, young people are unprepared for whatever further educational steps they must take. Many socio-economically handicapped students never really master these skills in their early school years because the teaching methods are not geared to their particular needs. Nor does the home situation reinforce the school's attempts to educate them. The result is that their days in school become almost unbearable; because they do not read easily and do not understand what they are trying to read or what the teacher is saying, they cannot keep up with their classwork. By the time they reach high school, their I. Q. tests, their school marks, and evaluations by their teachers have designated them as "slow learners."

The public schools are faced with the problem of having these low achievers learn how to learn and thereby develop academic competence to the degree that they can take their place as productive members of society as it is becoming. Arthur Pearl (35) repeatedly

states that nearly everything we are now doing only makes the problem worse.

Research on reading instruction comprises more material than research in any other part of the curriculum. W. S. Gray (16, p. 865) estimated in 1960 some 4,000 scientific studies of the sociology, psychology, and teaching of reading were available. This amount of research plus the ever present problem of poor readers indicates the difficulty in finding methods for teaching reading which insure success for the student. After reviewing recent research on reading Bateman (3, p. 3) was led to suggest that a very substantial percentage of children, perhaps three-fourths of them, seem to acquire the skills of reading and comprehending almost by "osmosis." She found the method of instruction seemed to matter very little compared to the fact of exposure.

Noteable success in the teaching of reading is reported in field tests of methods and materials prepared by S.R.A., Lubach, i/t/a, Sullivan, Words in Color, and many others. Although it is difficult to deny this "evidence" of successful learning experiences on the basis of feelings and hunches of classroom teachers Haberman (18, p. 613) states:

. . . it seems to me and to those who make detailed analysis of materials for teaching the disadvantaged, that there is no ultimate system for teaching reading or anything else; that what is needed is a variety of approaches and materials in each class.

The literature supports Martin Deutsch (38, p. 181) in his claim that it is generally agreed that the language-symbolic process plays an important role in all levels of learning; and yet despite accumulating knowledge, Shane (41, p. 84) suggests that the process by which children learn their native language is in many respects a mystery.

Bernstein (4, p. 273) has pointed out the lower-class tends to use informal language which mainly conveys concrete needs, while the middle-class usage tends to the more formal and emphasizes relating concepts. This difference between these two milieus emphasizes the communications gap which often exists between the middle-class teacher and the lower class child.

The fact that there are large number of pupils who, even in high school, read at a fourth-grade level and have great difficulty in writing a few, straightforward sentences is called a tragedy by Olsen (33, p. 82) as he describes the inflexibility and educational inequality of our schools today.

The renewed emphasis nationwide on seeking ways to improve the learning situation for children designated as low achievers or disadvantaged provides new hope that these children can be educated, that they must be educated, and that professional educators must devise imaginative, creative approaches to meet the needs of these low achieving students. It was from this point of view that the

research on using low achieving students to tutor low achieving students was proposed.

Fundamental Assumptions

For the purpose of this study, the terms used in this investigation will be defined to mean the following:

1. Low achiever: In this study, the term refers to students to whom the euphemisms slow learner, disadvantaged, underachiever, and backward have been applied. For purposes of classification the following criteria were used for placing students in a Track C program from which the study population was drawn.
 - a. students achieving in the lower ten to fifteen percent of their class
 - b. students usually reading two or more years below grade level as measured by a standardized group reading test
 - c. students having a measured (group test) I.Q. score in the approximate range from high seventies through low nineties (No attempt was made to distinguish between functional intelligence and innate intelligence.)
2. Tutors: High school seniors in low achiever English classes who assisted freshmen students with English assignments on an individual basis.

3. Experimental group: This included the classes of senior tutors as well as the freshmen classes being tutored.
4. Control group: The freshmen and senior classes in this study taught by the traditional method.
5. The sample selected for this study represented a normal population of low achievers.

Limitations of this Study

1. This study was limited to students in low achiever English classes from Centennial and Gresham High Schools, Gresham, Oregon.
2. The study was further limited to two sections of freshmen and two sections of seniors in each school, or a total of eight sections of students.
3. Only the effects of tutoring on reading, language usage, spelling, and interest in the subject of English were studied.
4. The data derived in this study in assessing these low achieving students was dependent on the validity, reliability, and appropriateness of the instruments used.

CHAPTER II

REVIEW OF RELATED LITERATURE

The review of the literature in this chapter covers three rather broad areas, all of which are significant to this study. The first area, summary of selected trends in the teaching of English, reviews trends which have influenced current teaching practices as well as trends which seem to be influencing the future of English teaching. The section of the slow-learner and the English program emphasizes the importance of reading and language skills improvement programs for low achieving students. The third section presents a survey of tutorial practices operating at the various levels of education: elementary, secondary, and college.

Summary of Selected Trends in the Teaching of English

In reviewing major current trends in English teaching, Guth (17, p. 9), by taking the long and comprehensive view, identifies four major movements that in the last several decades have "decisively affected" what the teacher of English does in his classroom. The most concrete of these developments, linguistics, while not accepted by many, did transform grammar from a rather weary convention into an intellectually challenging discipline. Today the influence of the linguist's re-examination of English grammar is

evident in most textbooks as well as at conventions where English teachers gather and often either eagerly proclaim the virtues of linguistics or adamantly denounce it.

A second major movement affecting the teaching of English, according to Guth, was a gradual trend to a more flexible attitude about "What is right language?" Teachers began to replace the alternative of correct and incorrect with the distinction between standard and nonstandard. Standard English became defined as the language of education and publishing; and nonstandard, the natural speech of people with relatively little formal education. Finally even this definition was broadened to recognize differences within standard English, such as formal written standard and informal conversational standard, and the result was to emphasize appropriateness instead of correctness.

The third of Guth's (17, p. 12) major trends was semantics, the responsible use of language in everyday life. He states:

Part of the attractiveness, but also part of the limitation of semantics has been that it has served the hard-pressed liberal in the classroom as a welcome weapon against various kinds of intellectual and political obscurantism . . . However, the very effectiveness of semantics as a tool in controversy may tempt the teacher to abuse it in the pursuit of short-range objectives. His goal should be to give his students the kind of semantic sophistication that will make them knowledgeable and responsible users of language in their later lives.

Guth (17, p. 14) left the English teacher's first love until last as he explores major trends. The teaching of literature takes many

forms but all tend toward the close reading of the text and close textual analysis "with an eye toward the wholeness of a given work."

James Squire (46, p. 3) , in reviewing eleven articles of a symposium concerned with the character of what is called 'new English,' finds at least six major influences on the English curriculum at the secondary level. These are listed below with some of his comments concerning them.

1. Major national projects in the teaching of English are providing impetus for curricular change. . . . In recent years professors of English and English education have engaged in a large number of regional curriculum development projects, most of them supported by the U. S. Office of Education.
2. New programs of pre-service and in-service education are preparing teachers to utilize new ideas and approaches.
3. New concepts and new ideas about the content of language, literature, composition, and the supporting skills are affecting much current activity in the teaching of English. The past two decades have seen a new method of literary criticism (new emphasis by linguists) and, more recently, new concerns with rhetoric, oral and written.
4. A new definition of English and the relationship between content and skill emerging from curricular efforts.
5. Recommendations from an Anglo-American Conference at Dartmouth will provide recommendations with long-range implications.
6. New awareness of social implications of language study has awakened concern for the education of all boys and girls. One of the startling findings of the National Study of High School English Programs was that America's high schools have become so overly concerned about English programs for the "upper tracks" that they are devoting neither adequate time nor sufficient efforts to programs for the less advantaged. Growing realization that many young people are denied educational and vocational opportunities because of linguistic disabilities has spurred efforts to design new programs for such students.

Professional literature is full of articles describing and discussing Project English, the one national project many writers believe will affect curriculum change most significantly in the next decade. The project, established by the Office of Education in late 1961, started with three Curriculum Study Centers. By 1964 nine centers were operating and this number grew to sixteen in 1967.

Slack (44), describes the emphasis various centers have, ranging in grade levels included as well as subjects covered. He illustrates this by describing the University of Oregon program as one including grades seven through twelve and the curriculum being prepared sequentially in language, literature, composition, and speech. Also, he states that it will be usable for eighty-five percent of the high school students, with only those at the two extremes needing other material.

Not all writers extol the virtues of the programs being developed by the Project English Curriculum Centers. Robert Carlsen (6, p. 988) is critical in that there is "no hint of experimentation with an ungraded curriculum in which a student elects individual short courses which deal with various aspects of the total field." He also believes it strange that the three subjects, language, composition, and literature should be so unfailingly hailed as the core of English and that almost nothing in the work of any Center helps students cope with mass media in their daily lives.

Reading continues to be the widespread component of language arts, according to Shane and Mulry (42, p. 6). In reviewing projects funded under Title I of the Elementary Secondary Education Act of 1965, it is very evident that reading is featured in a great majority. The Great Cities School Improvement Program under the Ford Foundation (51), underlines the importance being placed on reading and related skills. Wachner (54, p. 740) describes the Detroit English S program, which was developed as part of the Great Cities Improvement Program, as being "attainable and functional" for the students they identify as culturally different. As evidence became available, the implications were that the course produced encouraging results in reducing the failure and dropout rate as well as markedly increasing the number of books read by each student.

A massive effort to improve students' composition skills has been reported by Jewett and Bish (23, p. 4). The National Education Association, with the aid of private funds supplied by the Dean Langmuir Foundation of New York, launched in 1962, a project on English Composition. The project had as its purpose to improve the quality of composition work in junior and senior high schools by ". . . employing what is now accepted as good practice in teaching writing, by utilizing valid research findings in language, and by developing and testing new methods and content." By 1963 nine school districts throughout the country were provided grants and

became part of the project.

The report carries an optimistic tone but provides little statistical data as yet. One would expect good results, however, just from the good organization of the project districts, the elimination from the teacher's schedule of non-professional activities, and emphasis placed on careful preparation by the teacher and the active involvement of the student.

New trends in English, as in other subject areas, are reflected in textbooks and also directed to some extent by the textbooks available. According to Divoky (12), in the fall of 1968, 2,720,000 California public school children in grades 1 - 8 will be using textbooks based on what is called the transformational grammar approach. She further reports that in Dallas, Texas, another form of new English--structural linguistics--was incorporated into all English and language arts classes in the fall of 1967.

While new trends in language study on which these texts are written began early in this century, it was not until 1957 that a young linguist at the Massachusetts Institute of Technology, Noam Chomsky (12) sparked a new way of dealing with the language, generative-transformational grammar. The two basic keys of this grammar are: (1) rules for generating sentences automatically, and (2) analysis of the manner in which sentences are generated and looking at the "kernels" they contain.

During this same time, Paul Roberts began taking this highly technical grammar to pupils. In 1964, he published a programmed-learning workbook for high-schoolers, "English Syntax." He then began a series of language books combining literature with new grammar for grades 3 - 12. Divoky (12, p. 1), suggests that the Paul Roberts Series is perhaps the major reason for the rapid acceptance of the new grammar. ". . . they eliminate all the dichotomies between literature and grammar by letting language study grow out of stories and poems."

The Low Achiever and the English Program

In discussing problem learners in school, Johnson (24, p. 3), points out that the students in the lowest quartile of student achievement form a population that is heterogeneous, as are the problems presented. He states:

Intellectually and educationally they form at least three broad and rather distinct groups. These are the mentally deficient, and mentally handicapped, and the slow learners. About one-fourth of the slow learners come from adequate homes and are making a reasonable although somewhat difficult adjustment to the traditional school and instruction. The remainder comprise the group around whom various problems are centered.

Tarver (47, p. 2), recognizes that research efforts ". . . have produced a varying estimate of the percentage of slow learners in the schools, but they all point to rather sizeable figures." These estimates range from a low of approximately one-sixth of the total

school-age population to twenty-five percent and even more.

The literature is full of descriptions of the low achiever, his characteristics and how to identify him. Many of the lists of characteristics are long and detailed, yet some basic agreements among nearly all writers emerge. Tincher (50), suggests that low achievers have fewer friends than do average or high achievers, and that very often, the homes of these youngsters are poor, culturally, economically and emotionally. Many low achievers are to be found in the "outgroup" according to Tarver (47, p. 11).

Another area of agreement deals with the importance of the teacher. He must accept the low achiever for what he is and believe in his right to the best and most conscientious guidance and instruction that can be devised. Even though there is consensus on the importance of the teacher, Johnson (25), found little positive objective evidence for identifying effective teachers of low achievers in his Ohio study of sixty teachers designated by their administrators as being successful with low achievers. What characteristics these successful teachers had in common, Johnson suggested might have resulted from the fact that administrators have encouraged teachers with these characteristics to accept such assignments.

Reading limitations of the low achiever is perhaps the most consistent and significant point of agreement concerning the characteristics that present the greatest challenge to upgrade. While the

most universally agreed-upon goal among parents of low achievers is represented in their demand, "Teach them to read," there is no clear-cut agreement on how to reach that goal. There is evidence that a day-by-day attack on reading skills may be the best approach for some. But for many teachers this highly structured approach leaves much to be desired. The National Council of Teachers of English Task Force declares that the reading purpose in most of the schools it visited was overshadowed by the mechanical aspects of the reading process. However, Spiegler (45, p. 190), reports that:

A closer, warmer relationship between life itself and the content of remedial materials is, however, in the making.

"Luis, the Pizza King" is a title in a reading series called "Springboards" (Great Society Press), aimed at reaching poor readers through a body of materials close to the hearts of those boys and girls whose interests are fairly elemental. Pupils who want to read about Luis are prepared to seek out the main ideas about him, to read between the lines for his innermost thoughts, to draw inferences about how Luis thinks on race relations, and to track down all the context clues about his views on dating. In short, say the writer and editors responsible for Luis, students learn how to read because there is some purpose in their learning.

In the same genre we find the Turner-Livingston Readers--a collection of short (fictionalized) stories about the adolescent and his pressing worries.

"Education for the disadvantaged means chiefly English for the disadvantaged, since our language is central to all other aspects of our culture," so states Richard Corbin (10, p. 78). He points out that without the ability to read and to write to some extent, the

individual, no matter what his inherent but unrealized intelligence, ". . . can never hope to enjoy vocational success or social acceptance." Corbin describes the Gateway English Project at Hunter College as one which has addressed itself to the problem of specifically teaching reading at grades seven, eight and nine. The materials used in this reading program have been developed based on the following assumptions:

1. All youngsters, whether reading on grade level or one or two years below it, will respond to good literature which expresses problems and ideas of relevance to them as well as to truths (whether set in realistic framework or in myth and legend) which they recognize as valid.
2. Increased interest in what is read will lead to desire for increased skills.
3. If encouraged to express themselves, students will welcome opportunities to do so, orally and in writing.
4. Emphasis on correctness may well be deferred until students are expressing themselves with directness, honesty, and a real desire to communicate their ideas to others both in speech and writing.

Experimental results of the use of these materials for two years in six Harlem junior high schools and one year in classes in Miami and San Diego are encouraging according to Corbin.

Mersand (32, p. 38), after agreeing with the need for extra instruction in reading for the slow learner, turns his attention to written composition and suggests the following:

Many short writing experiences are needed. The slow learner must learn how to write a note, a letter, a set of directions. . . Slow learners need help in organizing their written work. Instructions must be specific. Examples of topic

sentences should be elicited and written on the chalkboard. Difficult words must be spelled. The more guidance that can be given before writing, the better the chance there will be for acceptable written work.

Hayes (22), reports on a saturation program of language activities--reading in small groups, whole class phonics lessons and word study, writing short compositions and playing word games. This coupled with free reading in a classroom library produced median reading score growth of 2.3 in less than one year for a class of Chicago fourth grade disadvantaged students.

Success in improved speech patterns and sentence structure, both in written and spoken language, has been reported by Aeschlimann (1, p. 23), with low achieving high school students. He refers to his method as the R.D.C.C. Method, the initials representing read, dictate, check, and correct. Most of the class time the greater part of the year is spent in these four activities. Aeshlimann illustrates his method with the following example:

. . . in teaching the correct punctuation of the introductory adverbial clause, I selected paragraphs containing many introductory adverbial clauses correctly punctuated. After distributing copies of the material, I had one or more students (depending upon the length of the paragraph) reading orally while the other students followed on their copies. This familiarized the students with the spelling, punctuation, and sentence structure and fixed a mental image of the material.

I then had the students put away their copies, and I dictated the paragraph to the students. After dictation I had the students compare their work with the copy from which I had read, checking to find and correct all errors. The students rewrote the material from the corrected copy.

Although many teachers believe the low achiever is not very interested in school work, Shehan (43, p. 45), states: "They are usually easily motivated for short periods of time and prove themselves to be docile and even enthusiastic when presented with problems they are able to solve." He agrees with other writers on the hunger of the low achiever for success and that when they see success is possible for them, they respond to frequent motivation. Shehan believes only the basic and most fundamental grammar necessary for good usage in daily life should be covered because of the great difficulty low achievers have in assimilating abstract ideas.

Dutton (14), would give the low achiever something new. He described a cooperative program for fifty high school freshmen in a three period block of English and geography. It was pointed out, however, that this was not the usual academic type of core program, but rather one which was built around field trips. Once each week the students were taken on visits to museums, art galleries, government offices, industry, local colleges and technical schools. Each week a different pupil was assigned to introduce the group to their host and another to thank the host at the end of each visit. In preparation for these trips, the pupils used the school library to locate information. On returning, students wrote letters of appreciation.

Hansen (19, p. 133) suggested a set of principles for the education of slow learners.

1. Every pupil should have a reasonable chance to finish high school.
2. What the slow learner needs more than anything else is more proficiency in the literary skills.
3. He needs an across-the-board curriculum program in the basic subjects: English (which includes reading, spelling, etc.), history, mathematics, and science.
4. Grouping slow learners in special basic classes will give them a chance to benefit by remaining in high school and at the same time will not hold back the progress of others.
5. The most democratic way to provide for the slow learner is to place him in a curriculum program geared to his level of achievement.

Summary of Selected Studies on Effects of Tutoring

The studies reported in this section on the effects of tutoring all took place in metropolitan areas: Oakland, California, San Diego, California, Los Angeles, California, and New York City.

The tutoring program conducted in the spring of 1964 as part of the Oakland Public Schools Interagency Project has been reported in detail by Weitzman (55, p. 108). Tutoring sessions involved three to five high school students for each of thirty junior and senior high school students who acted as tutors. Sessions were held twice weekly and all participants were volunteers. Weitzman states:

. . . the investigation was designed to (1) measure the effectiveness of the tutoring program as a teaching tool for improving programs on classroom tests and assignments, increasing motivation and interest, and improving study habits, and (2) develop and test evaluation techniques and measuring instruments which could be applied to a full scale study at a later time.

From this, Weitzman points out that four general hypotheses were selected for an empirical test:

Hypothesis One states that tutored students will show greater improvement on classroom assignments and quizzes than non-tutored students.

Hypothesis Two states that tutored students will show greater improvement on reports, essays, homework exercises and other classroom assignments than non-tutored students.

Hypothesis Three states that tutored students will show increased motivation and interest in the subject when compared with non-tutored students.

Hypothesis Four states that tutored students will show improvements in study habits when compared with non-tutored students.

The study showed that only Hypothesis One was rejected; the remaining three were accepted.

Edler (15, p. 195), used a group of high school students in the Oakland School District as tutors in his study of the use of tutors in after-school study centers and found that students from a variety of backgrounds can be used as tutors, and that no single background factor is identified as dominant for the selection of tutors. He also found that tutors generally were motivated to higher personal achievement and gained greater understandings of basic subject matter and methods of learning. A conclusion of his study was that the use of students as tutors appears to be sound educationally and that it represents an educational resource which is largely untapped.

Payne (34, p. 22) in writing about the tutoring programs in San Diego City Schools states:

Among other types, there are four major types of tutorial programs useful in a Compensatory Education program.

1. The services of students at a given school organized for tutoring pupils within that school.
2. The acceptance of tutors sponsored by community agencies or educational institutions sponsoring tutorial programs.
3. Providing tutoring services by teacher assistants who are regularly assigned to work with given teachers and classes.
4. The recruiting of volunteer tutors from the community and school staff.

In September of 1965 the San Diego City Schools established a tutorial program in E.S.E.A. high schools. Three areas of a typical tutorial program were recommended for the project: (1) Cooperation with community agencies sponsoring tutorial programs, (2) organization of tutorial services offered traditionally in the schools, and (3) recruiting tutors from the community who might apply on an interest basis. Payne points out that the hypotheses formulated for this project were three in number:

1. That remedial and improved benefits may be accrued by individual face-to-face supervision of potential study skills.
2. That qualified tutoring personnel under professional supervision is a useful resource for a program of Compensatory Education.
3. That tutoring helps to develop student confidence in otherwise seemingly insurmountable study situations, thereby creating a more desirable self-image.

Even though the project evaluation claims that each of the three hypotheses were accepted, it needs to be noted that this experiment was conducted in such a way that statistical significance

cannot be claimed. Also the increased achievement of some of the students may have been the result of curriculum innovations operating simultaneously with the tutorial project.

Besay (5) studied a number of tutoring projects in the Los Angeles area in an attempt to determine the effect such programs had on the alienation construct as it applied to education. His study included school projects from all levels of education, non-school projects, and involved tutors from the community as well as from the schools. An interesting finding from this study was that tutoring time showed no significant correlation to alienation score; however, there was some indication that as tutoring time increased, dissatisfaction with the present also increased, while dissatisfaction with the future decreased.

The final tutoring program to be reviewed in this section is the Mobilization for Youth Tutorial Project. It is part of the Mobilization for Youth, Inc., which was established in 1959 with funds from the National Institute of Mental Health, the President's Committee on Juvenile Delinquency, the Ford Foundation, the City of New York. Cloward (7), suggests that a remarkable feature of this program was the hiring, at \$1.50 per hour, of tenth and eleventh grade students from low-income areas to tutor fourth and fifth grade Negro and Puerto Rican pupils who were achieving below grade level in reading. Cloward (8, p. 14) describes the research setting as follows:

The tutorial program featured the employment of tenth and eleventh-grade students as tutors for fourth and fifth-grade pupils whose reading achievement was below grade level. The tutors were paid \$11.00 per week for six hours of tutoring and two hours of in-service training. The tutoring took place from about 3:00 p.m. to 5:00 p.m. on Tuesdays, Wednesdays, and Thursdays. Each pupil was assigned to a specific tutor whom he saw either one of two afternoons a week at the center nearest his home. The tutoring took place in school classrooms, with from one to four tutor-pupil pairs working in each room. At the end of each session the tutor escorted his pupil home.

The present program was instituted in February, 1963, by Mobilization for Youth, Inc., and is still in operation at the time of this writing. The present report concerns the evaluation of the program as it was carried out between November 4, 1963 and June 5, 1964. During this period eleven tutorial centers were organized in neighborhood elementary schools. Each center was administered by a Board of Education licensed teacher. These eleven teachers, in turn, functioned under the direction of a Mobilization for Youth program coordinator. The teachers were responsible for organizing and supervising the tutorial activities in their centers and also for providing a weekly in-service education program for the high school tutors.

In order to evaluate the accomplishments of the project, classical experiments were set up. Applicants were assigned at random to control and experimental groups with a total of 356 experimental pupils, 157 control pupils, 97 experimental tutors and 57 control high school students. According to Cloward, the findings in the study demonstrated that high school students can effectively tutor low achieving fourth and fifth grade pupils in reading. He reports the following (7, p. 606):

At the beginning of the study, the average pupil was reading nine months below grade level. At the end of five months, pupils who were tutored as often as two afternoons a week showed a gain of six months in reading as compared with only

three-and-a-half months for control pupils. This difference was statistically significant.

Pupils tutored only one afternoon a week showed a reading gain of five months in five months time. While their growth rate exceeded that of the control pupils, the differences in growth rates were not statistically significant.

This tutoring project also produced evidence that tutoring benefits the tutors. Pretests showed no difference between experimental and control tutor groups; yet after seven months experience as tutors, the average experimental subject was found to be reading 1.7 years ahead of the average control subject.

Survey of Selected Tutorial Practices

Although tutorial services are in a sense as old as education itself, a new interest seems evident from the number and types of projects reported in professional literature. It appears that a great deal of tutoring recently has been directed to the elementary school child primarily in the area of reading. However, studies indicate programs are operating at nearly all levels of education with tutors being drawn from a wide variety of age groups and from widely varying educational backgrounds.

The tutoring programs conducted by the Oakland, California Public Schools have been described by a number of writers. Asbell (2, p. 69) reports, ". . . first-graders who once could not learn their ABC's in the regular classes are learning them eagerly in

daily forty-five minute sessions with sixth-grade tutors." Although some of the tutors are backward learners themselves, according to Asbell, they are teaching effectively, becoming better learners, and showing remarkable improvement in their behavior, dress, and attitude toward school.

Cincinnati, Ohio schools report that tutoring programs have sprung up mainly as a result of community initiative. In an article in Educational Research Service (40, p. 54), three of their programs are described as follows:

Volunteers in Public Schools (VIPS) is an in-school tutoring program whose members belong to the Junior League, Council of Jewish Women, YWCA, Women's City Club, United Church Women of Cincinnati, and the Elementary Council of PTA. These volunteers are trained by the school and work exclusively during school hours, mainly in the area of reading in the primary grades. VIPS currently works in three elementary schools, each volunteer being equipped with instructional materials purchased by the schools. One supervising teacher is in charge of the training and supervision of the tutors. Volunteers are recruited from within member organizations and typically tutor twice a week per pupil for periods ranging from thirty to forty-five minutes.

The West End Educational Project (WEEP) is the largest after-school tutoring project. It is sponsored by the United Campus Christian Fellowship of the University of Cincinnati and tutors pupils in nine elementary schools as well as some junior high schools. The tutors are students from the University of Cincinnati, Xavier University, and other nearby colleges. Training and supervision of the student volunteers has been done by WEEP with consultant help from the public schools. Instructional materials are used by the school in its regular academic program. Separate instructional materials for tutoring purposes have not been supplied by the schools. In essence, programs such as WEEP have operated with the sanction of the schools, yet relatively independent of the schools. The schools

identify pupils, provide tutoring space when needed, and consult with tutors on pupil need and progress. In addition to this program involving several schools, there are many local school tutoring programs.

The tutoring program at one school recruited volunteers through the PTA who made personal contact with, and sent questionnaires to, each home. Nine former teachers, eight graduate students from a nearby college, and six seniors from a local high school who are members of the Future Teachers Association, have been recruited for the tutorial program. In addition, arrangements have been made with the Association of Independent Women at the University of Cincinnati to furnish thirty to forty tutors during the current school year.

Although no evaluation of these programs was included, satisfactory results were indicated by the fact that a proposal was made to install twenty-six elementary and six junior high tutorial centers to be supervised by regular staff during the day and volunteer tutors during after school hours.

College students acting as tutors for disadvantaged high schoolers has gained in popularity in recent years. One such project in the Williamsport, Pennsylvania area involves seventy volunteers from Lycoming College (9). At the time of reporting (1966), the program was in its third year and was providing needed assistance in the various academic areas in which students were deficient. As in the case of most programs aimed at helping the disadvantaged, reading was determined to be one of the major reasons for deficiencies of the high schoolers who were having academic difficulty.

Another program involving college tutors for high school students is found in Ithaca, New York, where volunteer Cornell

University students provide tutoring help to high school students needing effective remedial instruction on basic skills (53). Tutors and pupils in this program are matched by a screening committee composed of Cornell University students, Ithaca personnel and interested citizens. The procedure used is for tutors to meet with "their" pupils in the school building after school hours. More than one hundred students received individualized help during the 1964-65 school year. Evaluation of the project was sufficiently encouraging that tutoring service was extended to the elementary schools during the school year 1965-66.

New York City's project, The Assistant to the Teacher Training Program, has been described by Pope (36, p. 23) as one in which the ". . . future of this group of trainees is uncertain, but hopeful. As a minimum, they will have absorbed learning vital to their futures and the futures of their children." This program was set up in cooperation with the Early Childhood Division of the Board of Education of the City of New York. School dropouts were offered a sixteen week training program to prepare them to assist teachers at the pre-kindergarten level. The applicants had to have a reading level of seventh grade. Their assignments were on a one-to-one basis with children who were (1) non-talkers, (2) limited in their ability to relate to group activities, (3) in need of individual attention, or (4) in need of a strong male image. Pope reports that all of

the dropouts involved in this project were, at the time of writing, continuing their schooling and planning to graduate from high school.

In some high schools honor societies and service clubs have taken on the responsibility of providing tutoring services. Delaney (11, p. 36) tells of a program at New Hyde Park Memorial High School where every day, eight to ten members of the Honor Society, each specializing in the subject he knows best, spend forty-five minutes after school helping deficient pupils. Delaney states:

Not only do deficient youngsters benefit from the tutoring service, but the academically capable student also has a place in these "extracurricular" classes. Sometimes a certain point made by a teacher cannot be understood by a student. . . The student has his question answered and explained by another student on the same day it perplexed him in class.

Kuppel (27, p. 256) reports on Belleville High School's Key Club-tutoring project and suggests ". . . the main reason for its success among some forty students who are being tutored is the fact that another student understands and appreciates the problem in a manner no adult can match."

Tutoring programs using gifted students at the college level are also in evidence. Thomas Hawkins, Dean of Men at Hampton Institute, has described a long standing program of tutoring at Hampton in two different articles. In 1959, Hawkins (20, p. 168) states: "An effective tutorial system can do much to reduce academic failure at the college level." He reports that starting with

170 persons aided in 1946, the ten-year cumulative total reached 4,674 in 1956. The developing objectives of the program were reported in a second article (21, p. 94) written in 1965. Hawkins states:

The tutoring program in which they are involved is designed to achieve the objectives as follows: (1) to give individual tutorial aid to students experiencing academic difficulty. (2) To reduce the academic mortality rate. (3) To stimulate the development of scholarly disciplines in the college. (4) To encourage students to strive for academic excellence.

"In recent years," Hawkins reported, "the tutorial program has not only reduced the academic mortality rate among freshmen and upper-classmen, but since 1959, seven colleges and one university have adopted volunteer tutorial programs." The tutorial program, according to Hawkins, has received support of faculty members because they seem to be interested in any qualitative program which will stimulate students to improve their scholarship.

Summary

The review of the literature related to trends in the teaching of English makes it evident that current activities in the field of English teaching require that the teacher of English must be prepared to make intelligent choices of techniques and curricula based on a familiarity with the specific details of his craft as well as a knowledge of how students learn. Especially is this true as he

attempts to improve students skill in reading, composition, and language through the study of literature. It was encouraging to note the trend toward a variety of programs which recognize that different students have different needs.

The variety of programs and materials was particularly evident in programs for the low achieving student in English. It was further evident from the variety of practices in use that there is no "best way" agreement on the teaching of low achievers.

Some would argue that so far no one has found the right methods to use. Martin Mayer (31, p. 325) states: "Nobody anywhere in the world knows how to give secondary education to the bottom third of the intelligence distribution." Although the literature does not seem to support Mr. Mayer fully in this contention, it does indicate the difficult task facing the educator concerned with this problem. It also indicates that there is no sure answer to the question of how to educate the low achiever. However, successes have been reported; and it would seem important for educators of slow learners to be open-minded, non-dogmatic and willing to experiment with a variety of methods.

The growth of the number of tutorial projects throughout the country and the diversity of types of programs would seem to indicate a growing belief that important contributions to the education of disadvantaged children as well as slow learners in general, can be

made by other young people whose life experiences provide a basis for empathy.

The chapter which follows describes the design of the research study the writer used in order to investigate the effect of a tutoring program in slow learner English classes where both the tutor and the student tutored were low achievers.

CHAPTER III

DESIGN OF THE STUDY

This study differs from the tutoring projects most frequently reported in the literature in two significant ways: (1) The entire program took place within the structure of the regular school day, and (2) all students involved in the study, both the tutors and the students tutored, were registered in high school low achiever classes.

The Setting

The study took place in the two high schools of the Gresham Union High School District, Gresham, Oregon. Gresham is a city of 6,000 people located twelve miles east of Portland, Oregon. A clearer picture of the setting is obtained by using Dobriner's differentiated zones of metropolitan centers. Dobriner (56, p. 153) states:

Although their language varies, ecologists, demographers, economists, sociologists, and political scientists think of the metropolitan area in terms of three differentiated zones. We can, therefore, assume that this view of metropolitan centers is generally useful. Since there is general agreement that the zones are there, but not complete accord on the terms used to describe these areas, we shall identify them as (1) the Central Core, (2) the Suburban Zone, and (3) the Rural-Urban Fringe.

Gresham High School, with its population of approximately 2,150 students, is located in what Dobriner calls a "Satellite City"

(Gresham). However, students for this school are drawn from within the city limits of Gresham, from the suburban zone between Gresham and Portland, and also from the rural-urban zone east of Gresham.

Total population figures for the Gresham High School attendance area has placed the figure at approximately 20,000 in 1965. Commercial farming to the west toward Portland has virtually been eliminated by rapidly growing housing projects. The more rural area to the east and to the south is split diagonally by a recently completed four lane highway that leads to recreational areas in the mountains and greatly speeds commuting to the metropolitan core. Small fruit and vegetable farms supply five major food processing plants in or near Gresham and patronize five farm implement concerns. A hospital and several rest homes give a greater portion of older people than the average for the total Portland Metropolitan Area.

Centennial High School, the second school used in this study, has an attendance area that is a two to three mile corridor on the Portland side of Gresham. The school is part of the Gresham Union High School District and has a student enrollment of nearly 1,700 pupils. Population has been estimated at approximately 20,000 for 1965. The northern portion is suburban development, while the southern portion, approximately one quarter of the total land area, is more rural and would probably qualify for Dobriner's

"rural-urban" fringe. The entire attendance area has several extensions of Portland streets which provide quick access to downtown shopping and employment.

Although neither of the attendance areas have what could accurately be termed slums, both schools are receiving funds under the Elementary and Secondary Education Act of 1965. These funds are based on a County Education Office estimate of 218 students in the district qualifying as coming from poverty-stricken homes. Also a Neighborhood Youth Crop program operates within the district with approximately fifty students employed.

Various estimates of income for the families living in the Union High School District show the largest group (33% to 50%) to be between \$6,000 and \$9,000, 4% to 24% to be less than \$3,000 and 7% to 30% to be over \$10,000.

Procedures Used

For this study 64 freshmen and 64 senior students in first semester high school low achiever English classes from Gresham and Centennial High Schools, Gresham, Oregon were used. These schools offered specially grouped English classes for the low achiever in which the emphasis was on reading, language usage, spelling, speaking and composition. District curriculum guides and materials as well as district in-service provided direction for similar courses

of study in all low achiever English classes.

Thirty-two seniors were used to tutor thirty-two freshmen which gave an experimental group of sixty-four. The control group, which did not participate in any tutoring activities, also had sixty-four members, thirty two freshmen and thirty-two seniors. The tutoring took place during regular class periods with approximately forty percent of the class time of the experimental group devoted to activities related to the project. The vehicle used for this tutoring program was the short story. This provided a common curriculum for all freshman and senior classes, both experimental and control. Other class periods of the week not devoted to project activities were also planned so that a similar curriculum was experienced by all students included in the program. The usual procedure was to spend Wednesdays in supervised study and discussion on a particular short story with Thursday's classes being devoted to the tutoring sessions. A study guide to be completed by the freshmen on Thursday was given to the senior tutors on Wednesday so they would be specifically prepared to assist their freshmen "student" on Thursday. Senior tutors were instructed to aid their freshmen to complete the study guide in the most satisfactory manner as possible. Control classes completed the study guides in regular classes without tutorial assistance.

The study guides for the literature studied included vocabulary, fill-in comprehension checks, short answer comprehension and

inference questions, and short (three or four sentence paragraphs) essay questions. An example of a study guide is found in Appendix C.

A pretest-posttest control group design was used with the students participating distributed in eight sections of low achiever. English classes in Gresham and Centennial High Schools in Gresham, Oregon. The experiment took place during the fall semester of 1967 and the final organization of the study is shown below:

<u>Control Group</u> (Traditional Teaching)			<u>Experimental Group</u> (Tutoring)		
Instructor	Period	Number of Students	Instructor	Period	Number of Students
A	5	16	A	4	16
B	1	16	B	4	16
C	3	16	C	2	16
D	6	16	D	2	16

Instructors A and B taught at Gresham High School while instructors C and D taught at Centennial High School. All four instructors had previous experience working with low achievers at the high school level, and all but instructor C had their major assignments in this area for the school year 1967-68. Following is a chart showing the period arrangement by school.

PERIOD	1	2	3	4	5	6	7
Gresham							
Instructor A				Fr.	Fr.		
Instructor B	Sr.			Sr.			
Centennial							
Instructor C		Fr.	Fr.				
Instructor D		Sr.				Sr.	

Students were assigned to their classes prior to the study and the method of student placement used by the counselors was to alternately assign pupils to the various periods in an effort to equalize class loads. All students assigned to these classes had been recommended for low achiever English by their teachers using the following criteria:

- (1) achieving in the lower ten to fifteen percent of their class
- (2) reading two or more years below grade level
- (3) scoring on I. Q. tests, mid to upper seventies through the low nineties (variations in criteria 3 occurred if criteria 1 and 2 were met)

To further validate the equivalency of the control group with the experimental group the t-test was applied for the I. Q. scores to determine if any significant statistical difference existed between the groups at the 5% level of significance.

Description of Testing Instruments and Their Uses in this Study

In order to obtain pre-treatment and post-treatment data, the following tests were used: (1) the Henmon-Nelson Tests of Mental Ability; (2) Diagnostic Reading Tests; (3) Survey of Language Achievement. A brief description of each test and its purpose for this study follows.

Henmon-Nelson Tests of Mental Abilities

The Henmon-Nelson Tests of Mental Abilities were used in this study as partial validation of the equivalency of the control and experimental groups. Form A, Grades 9-12, which was used in this study, has 90 test items arranged in order of increasing difficulty. Information regarding validity and reliability is found in Appendix B.

Diagnostic Reading Tests-Survey Section

The Survey Section of the Diagnostic Reading Tests was used to test hypotheses one and four. The survey Section has three subtests: (1) General Reading, (2) Vocabulary, and (3) Comprehension. There are eight forms of the Survey Section of the Diagnostic Reading Test, Forms A through H. In this study, Form A was used as a pretest and Form B as a posttest. Information regarding reliability is found in Appendix B.

Surveys of Achievement-Language Section

The Language Section of Surveys of Achievement Tests published by the California Test Bureau was used in this study to test hypotheses two, three, five and six. There are two forms of the Surveys of Achievement-Language Section, Form 1 and Form 2. In this study Form 1 was used as a pretest and Form 2 as a posttest. Information regarding validity and reliability is found in Appendix B.

Teacher Rating of Student Attitude

In order to test hypotheses seven and eight, all four project teachers were asked to rate project students on a four point scale with regard to interest in the subject of English. Teachers rated students at the end of approximately the first three weeks of school and then again at the close of the first semester. The rating scale used was identical with that used by Weitzman (55) in his study of tutoring effects on student motivation in the Oakland Public Schools. The four points of rating were, "poor," "fair," "good," and "excellent."

Summary

In this chapter the writer has identified the setting in which the study took place, has described the specific details of how the study

was organized, and has briefly described the testing instruments and their particular uses in investigating the hypotheses of the study. In Chapter IV the data collected with these testing instruments are presented and analyzed.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

This study was conducted for the purpose of investigating the effectiveness of a tutoring program in low achiever English classes as a teaching tool for improving student achievement in reading comprehension, language usage skills, and spelling. The effect the program had on student interest toward the subject of English was also investigated.

Analysis Procedure

The Department of Statistics at Oregon State University recommended the statistical procedures followed in this study. The analysis of variance was used to evaluate pretest-posttest differences for hypotheses one through six. This method can be found in Wert (56, p. 172) or Li (29, p. 151). The t-test (29, p. 187) was used for hypotheses seven and eight. The t-test also was applied for the I.Q. scores to determine if any statistical difference in ability existed between the control and experimental groups at the 5% level of significance.

Equivalence of Groups

The control and experimental groups were equated as explained

in Chapter III using the following criteria:

- (1) achieving in the lower ten to fifteen percent of their class
- (2) usually reading two or more years below grade level
- (3) approximate I.Q. -mid to upper seventies through low nineties

The t-test was applied for the I.Q. scores and a value for t was found to be .55, which was not significant at the .05 level. (See Table 1). Therefore, the equivalence of the control and experimental groups was demonstrated.

Table 1. I.Q. Means for Control and Experimental Groups.

Group	Number	Intelligence Quotient	Difference
Control	64	89.0	.07*
Experimental	64	89.8	

*Not significant at .05 level

Analysis of the Data for Hypotheses One Through Six

Hypotheses one through six in this study dealt with the language arts skills of language usage, spelling and reading comprehension. Pretests and posttests were administered to 64 freshmen and 64 seniors, for a total of 128 students. The analysis of variance was applied to the differences in pretest-posttest scores and the results of this analysis is shown below. Results for hypotheses seven and

eight are found on page 55.

Hypothesis number one: The tutoring program was as effective for students acting as tutors as was a traditional program in improving reading comprehension of high school seniors taking an English course. Table 2 of this chapter reveals that the seniors in the traditional program had a slightly greater gain in reading comprehension than did the seniors who acted as tutors. The mean gain for seniors in the tutoring program was 3.40 as compared to 3.65 for the seniors in the traditional program. However, the analysis of variance, shown in Table 3, indicated that this difference was not statistically significant at the .05 level. These results did not reject the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in improving reading comprehension for the seniors. Therefore, hypothesis number one was accepted.

Hypothesis number two: The tutoring program was as effective for students acting as tutors as was a traditional program in improving language usage of high school seniors taking an English course. Table 4 of this chapter shows that the seniors in the tutoring program made greater gains in language usage skills than did the seniors who were in the traditional program. The mean gains for seniors who acted as tutors was 5.44 as compared to 3.44 for the seniors in the traditional program. However, the analysis of

Table 2. Mean Scores of Seniors for Diagnostic Reading Tests.

Number	Pretest Mean	Posttest Mean	Difference
Tutoring Program			
32	41.75	45.15	3.40
Traditional Program			
32	40.06	43.71	3.65

Table 3. Analysis of Variance of Pretest-Posttest Differences of Reading Test Scores for Seniors.

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square
Between Groups	1	1.00	1.00
Within Groups	62	1482.94	23.91
Total	63	1483.94	

$$F = \frac{1.00}{23.91} = \underline{\underline{0.04}} \text{ (Not significant at .05 level)}$$

Table 4. Mean Scores of Seniors for Language Tests.

Number	Pretest Mean	Posttest Mean	Difference
Tutoring Program			
32	44.75	50.19	5.44
Traditional Program			
32	45.75	49.19	3.44

Table 5. Analysis of Variance of Pretest-Posttest Differences of Language Test Scores for Seniors.

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square
Between Groups	1	64.00	64.00
Within Groups	62	1374.75	22.17
Total	63	1438.75	

$$F = \frac{64.00}{22.17} = \underline{2.88} \text{ (Not significant at .05 level)}$$

variance, shown in Table 5, indicated that this difference was not statistically significant at the .05 level. These results did not reject the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in improving language usage skills for the seniors. Therefore, hypothesis two was accepted.

Hypothesis number three: The tutoring program was as effective for students acting as tutors as was a traditional program in improving spelling skills of high school seniors taking an English course. Table 6 of this chapter shows that the seniors in the tutoring program made slightly greater gains in spelling skills than did seniors who were in the traditional program. The mean gain for seniors who acted as tutors was 1.78 as compared to 1.53 for the seniors in the traditional program. However, the analysis of variance, shown in Table 7, indicated that this difference was not statistically significant at the .05 level. These results did not reject the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in improving spelling skills for the seniors. Therefore, hypothesis three was accepted.

Hypothesis number four: The tutoring program was as effective for students being tutored as was a traditional program in improving reading comprehension of freshmen high school students

Table 6. Mean Scores of Seniors for Spelling Tests.

Number	Pretest Mean	Posttest Mean	Difference
Tutoring Program			
32	6.46	8.24	1.78
Traditional Program			
32	6.75	8.28	1.53

Table 7. Analysis of Variance of Pretest-Posttest Differences of Spelling Test Scores for Seniors.

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square
Between Groups	1	1.00	1.00
Within Groups	62	208.44	3.36
Total	63	209.44	

$$F = \frac{1.00}{3.36} = \underline{0.29} \text{ (Not significant at .05 level)}$$

taking an English course, Table 8 of this chapter shows that the freshmen receiving tutoring made greater gains in reading comprehension skills than did the freshmen who were in the traditional program. The mean gain for freshmen who were tutored was 5.37 as compared to 2.09 for the freshmen in the traditional program. The analysis of variance, shown in Table 9, indicated that this difference was statistically significant at the .05 level. These results rejected the null hypothesis that there was no significant difference in the effectiveness in improving reading comprehension skills for the freshmen. Therefore, hypothesis four was rejected.

Hypothesis number five: The tutoring program was as effective for students being tutored as was a traditional program in improving language usage skills of freshmen high school students taking an English course. Table 10 of this chapter shows that the freshmen receiving tutoring made greater gains in language usage skills than did the freshmen who were in the traditional program. The mean gain for freshmen who were tutored was 6.43 as compared to 4.62 for the freshmen in the traditional program. The analysis of variance, shown in Table 11, indicated that this difference was not statistically significant at the .05 level. These results do not reject the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in improving language usage skills for the freshmen. Therefore,

Table 8. Mean Scores of Freshmen for Diagnostic Reading Tests.

Number	Pretest Mean	Posttest Mean	Difference
Tutoring Program			
32	34.40	39.78	5.37
Traditional Program			
32	38.40	40.49	2.09

Table 9. Analysis of Variance of Pretest-Posttest Differences of Reading Test Scores for Freshmen.

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square
Between Groups	1	172.27	172.27
Within Groups	62	1550.22	25.00
Total	63	1722.49	

$$F = \frac{172.27}{25.00} = \underline{6.89} \text{ (Significant at .05 level)}$$

Table 10. Mean Scores of Freshmen for Language Tests.

Number	Pretest Mean	Posttest Mean	Difference
Tutoring Program			
32	45.00	51.43	6.43
Traditional Program			
32	46.93	51.55	4.62

Table 11. Analysis of Variance of Pretest-Posttest Differences of Language Test Scores for Freshmen.

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square
Between Groups	1	52.56	52.56
Within Groups	62	1671.38	26.95
Total	63	1723.94	

$$F = \frac{52.56}{26.95} = \underline{1.95} \quad (\text{Not significant at .05 level})$$

hypothesis five was accepted.

Hypothesis number six: The tutoring program was as effective for students being tutored as was traditional teaching in improving spelling skills of freshmen high school students taking an English course. Table 12 of this chapter shows that the freshmen receiving tutoring made slightly greater gains in spelling skills than did the freshmen who were in the traditional program. The mean gain for freshmen who were tutored was 3.71 as compared to 3.31 for the freshmen in the traditional program. The analysis of variance, shown in Table 13, indicated that this difference was not statistically significant at the .05 level. These results did not reject the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in improving spelling skills for the freshmen. Therefore, hypothesis six was accepted.

Analysis of the Data for Hypotheses Seven and Eight

Hypotheses seven and eight of this study dealt with the effect the tutoring program had on student interest in the subject English. All four teachers involved in the study did a pre-treatment rating and a post-treatment rating of student interest in English on the 128 students in the study. A four point scale of poor, fair, good, and excellent was used. Numerical values of 1, 2, 3, and 4 were

Table 12. Mean Scores of Freshmen for Spelling Tests.

Number	Pretest Mean	Posttest Mean	Difference
Tutoring Program			
32	14.66	18.37	3.71
Traditional Program			
32	15.12	18.43	3.31

Table 13. Analysis of Variance of Pretest-Posttest Differences of Spelling Test Scores for Freshmen.

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square
Between Groups	1	2.25	2.25
Within Groups	62	895.75	14.44
Total	63	898.00	

$$F = \frac{2.25}{14.44} = \underline{0.15} \text{ (Not significant at .05 level)}$$

assigned to these teacher ratings of poor, fair, good, and excellent. A t-test was applied to the differences of the pre-rating--post-rating scores and the results of the analysis follows:

Hypothesis number seven: The tutoring program was as effective for students acting as tutors as was a traditional program in increasing student interest in the study of English for high school seniors taking an English course. Table 14 of this chapter shows the mean scores of seniors for teacher rating on interest in the subject of English. The mean gain for seniors who acted as tutors was 0.91 as compared to 0.38 for the seniors in the traditional program. A t-test was applied to the teacher ratings and the difference was found to be statistically significant at the .05 level. Tables 20 and 21 in Appendix A show the teacher ratings by student. These results rejected the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in increasing student interest in the subject English. Therefore, hypothesis seven was rejected.

Hypothesis number eight: The tutoring program was as effective for students being tutored as was a traditional program in increasing student interest in the study of English for freshman high school students taking an English course. Table 15 of this chapter shows the mean scores of seniors for teacher rating on interest in the subject of English. The mean gain for freshmen who

Table 14. Mean Scores of Seniors for Teacher Rating on Interest.

Number	Pre-Rating	Post-Rating	Difference
Tutoring Program			
32	2.34	3.25	0.91
Traditional Program			
32	2.56	2.94	0.38
$t = \underline{2.46}$ (Significant at .05 level)			

Table 15. Mean Scores of Freshmen for Teacher Rating on Interest.

Number	Pre-Rating	Post-Rating	Difference
Tutoring Program			
32	2.06	2.91	0.85
Traditional Program			
32	2.40	2.78	0.38
$t = \underline{2.10}$ (Significant at .05 level)			

were tutored was 0.85 as compared to 0.38 for the freshmen in the traditional program. A t-test was applied to the teacher ratings and the difference was found to be statistically significant at the .05 level. Tables 22 and 23 in Appendix A show the teacher ratings by student. These results rejected the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in increasing student interest in the subject of English. Therefore, hypothesis eight was rejected.

Summary

In this chapter the data collected for this study were presented and analyzed. The analysis of variance was used in the analysis of the data relating to the first six hypotheses. Hypotheses one, two, three, five, and six were accepted since no statistically significant difference was found in the mean gain between the experimental and control groups. Hypothesis four was rejected since the analysis of variance did show a statistically significant difference in reading comprehension scores between the experimental and control groups that favored the experimental group.

Data for hypotheses seven and eight were analyzed by using the t-test. Both of these hypotheses were rejected since the analysis of the data showed a statistically significant difference in student interest ratings between the experimental and control groups that

avored the experimental group.

Chapter V, which follows, reports the findings which relate to these data, summarizes the study and makes recommendations for further investigation.

CHAPTER V

SUMMARY, ANALYSIS OF FINDINGS, AND RECOMMENDATIONS

Summary

Widespread interest in low achieving and disadvantaged students has been evident in recent years. Tutorial programs for disadvantaged students have increased so rapidly and involved such a variety of tutors and sponsors that it seems appropriate to speak of a tutorial movement developing across the country. The purpose of this study was to investigate the effectiveness of a tutoring program which differed from the tutoring projects most frequently reported in the literature in two significant ways: (1) The entire program took place within the structure of the regular school day, and (2) all students involved in the study, both the tutors and the students tutored, were registered in high school low achiever English classes.

Eight null hypotheses were formulated which compared the tutoring group with a traditional group. The specific areas compared were as follows: reading comprehension, language usage, spelling, and interest in English. These hypotheses are stated on pages 3 and 4 of this study and restated on pages 64 through 69 in a sequence which grouped the rejected hypotheses together and the accepted hypotheses together.

The review of the literature in Chapter II covered three broad areas: selected trends in English teaching, the low achiever and the English program, and tutoring studies and practices. While there was considerable evidence of change in English teaching reported in the literature, no single program or direction appears to have a clear vote of confidence of a majority of English teachers. It was encouraging to note, however, the amount of activity in the field of English teaching and programs geared for the low achiever. The literature indicated new programs were being developed which were teacher directed and also programs involving tutors which reported success.

Chapter III presented the design of the study showing that one hundred twenty-eight students registered in low achiever English classes were used with sixty-four of them freshmen and sixty-four of them seniors. Thirty-two of the seniors were used to tutor thirty-two of the freshmen which gave an experimental group of sixty-four. The control group, which did not participate in any tutoring activities, also had sixty-four members, thirty-two freshmen and thirty-two seniors. All tutoring activities took place during regular class periods with approximately forty percent of the class time of the experimental group devoted to activities related to the project. The usual procedure for the experimental group was to spend Wednesdays in supervised study and discussion on the

particular lesson that was to be used for Thursday's tutoring session. A study guide to be completed by the freshmen on Thursday was given to the senior tutors on Wednesday and the tutors were instructed to aid their freshmen on Thursday to complete the study guide in the most satisfactory manner possible. Control classes completed the study guides in regular classes without tutorial assistance.

A pretest-posttest control group design was used with the students participating distributed in eight sections of low achiever English classes in Gresham and Centennial High Schools in Gresham, Oregon. The Diagnostic Reading Tests were used to compare reading comprehension gains for the experimental and control groups. Language usage and spelling comparisons were made from results obtained through administering the California Surveys of Achievement-Language Section. Changes in student interest was compared through use of teacher rating scales.

Analysis of Findings

Presentation and analysis of data for this study can be found in Chapter IV. The statistical tool used to evaluate pretest-posttest differences for hypotheses one through six was the analysis of variance. Hypotheses seven and eight were analyzed by using the t-test. In each case statistical significance was determined at the .05 level. All eight hypotheses compared a tutoring program with a traditional

program in low achiever English classes.

Of the eight hypotheses in this study, three hypotheses--four, seven and eight, were rejected since the students in the tutoring program had pre-treatment--post-treatment differences which proved to be significantly higher than did the students in the traditional program. Hypotheses one, two, three, five and six were accepted since the differences found between the tutoring program and the traditional program did not prove to be significant.

The findings and implications relating to hypotheses four, seven and eight are discussed first, followed by the findings and implications of hypotheses one, two, three, five, and six.

Rejected Hypotheses

Hypothesis number four: The tutoring program was as effective for students being tutored as was a traditional program in improving reading comprehension of freshmen high school students taking an English course.

Tutored students showed a statistically significant increase in reading comprehension over the freshmen who were in the traditional program. This evidence rejected the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in improving reading comprehension for the freshmen. Therefore, hypothesis four was rejected.

Hypothesis number seven: The tutoring program was as effective for students acting as tutors as was a traditional program in increasing student interest in the study of English for high school seniors taking an English course.

Seniors who acted as tutors showed a statistically significant improvement in interest in the subject of English as measured by Weitzman's Scale who were in the traditional program. This evidence rejected the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in improving student interest in English for the seniors. Therefore, hypothesis seven was rejected.

Hypothesis number eight: The tutoring program was as effective for students being tutored as was a traditional program in increasing student interest in the study of English for freshmen high school students taking an English course.

Freshmen who received tutoring showed a statistically significant improvement in interest in the subject of English as measured by Weitzman's Scale over the freshmen who were in the traditional program. This evidence rejected the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in improving student interest in English for the freshmen. Therefore, hypothesis eight was rejected.

Implications for hypotheses four, seven and eight: Research

cited in Chapter II, indicating the benefits of tutoring programs, has been further supported by this study in the areas included in hypotheses four, seven, and eight. The rejecting of hypothesis four, that there was no significant difference in the effectiveness of the tutoring program and the traditional program in improving reading comprehension for the freshmen, adds support to the studies which indicate that there is no "best way" to teach reading. The fact that the tutors were students who were registered in low achiever English classes would suggest that a possible educational resource is available which has been largely untapped. This study demonstrated that students who have been identified as low achievers can provide significant assistance in reading instruction to low achievers in lower grades.

The fact that both the tutors and the students tutored had increased interest in the study of English, as demonstrated in the rejection of hypotheses seven and eight, suggests these students found the tutoring program to be a more interesting approach to the study of English than a traditional program. These findings add support to Shehan's (43) statement that slow learners can become interested in school work and even enthusiastic when presented with something in which they can succeed.

Accepted Hypotheses

Hypothesis number one: The tutoring program was as effective for students acting as tutors as was a traditional program in improving reading comprehension of high school seniors taking an English course.

Although the traditional teaching program produced a slightly greater mean gain in reading comprehension for seniors than did the tutoring program, the analysis of variance results indicated a lack of evidence to reject the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in improving reading comprehension for the seniors. Therefore, hypothesis number one was accepted.

Hypothesis number two: The tutoring program was as effective for students acting as tutors as was a traditional program in improving language usage skills of high school seniors taking an English course.

Students who acted as tutors had a mean gain in language usage skills which was greater than the seniors in the traditional program. However, the difference was not sufficient to reject the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in improving language usage skills for the seniors. Therefore, hypothesis two

was accepted.

Hypothesis number three: The tutoring program was as effective for students acting as tutors as was a traditional program in improving spelling skills of high school seniors taking an English course.

Even though the mean gain in spelling skills for senior tutors was slightly greater than the mean gain for the seniors in the traditional program, the difference was not sufficient to reject the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in improving spelling skills for the seniors. Therefore, hypothesis three was accepted.

Hypothesis number five: The tutoring program was as effective for students being tutored as was a traditional program in improving language usage skills of freshmen high school students taking an English course.

The tutoring program produced a greater mean gain in language usage skills for freshmen than did the traditional program. However, the difference did not prove to be statistically significant. Therefore, the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in improving language usage skills was accepted.

Hypothesis number six: The tutoring program was as

effective for students being tutored as was a traditional program in improving spelling skills of freshmen high school students taking an English course.

Although the tutoring program produced a slightly greater mean gain in spelling skills for freshmen than did the traditional program, the difference proved insufficient to reject the null hypothesis that there was no significant difference in the effectiveness of the tutoring program and the traditional program in improving spelling skills for the freshmen. Therefore, hypothesis number six was accepted.

Implications for hypotheses one, two, three, five, and six: It would appear from this study that some of the reciprocal benefits of tutoring for the tutors and the students tutored which have been reported by such writers as Asbell (2) and Cloward (7) are more difficult to produce in high school senior low achievers than in younger students. Asbell reported sixth-grade backward learners becoming better learners as a result of being tutors and Cloward reported tenth and eleventh grade students from low-income families improving their reading scores 1.7 years during seven months experience as tutors. The lack of evidence of significant reciprocal benefits for the tutors in the language arts skill areas of reading comprehension, language usage, and spelling may be in the inadequacy of the testing instruments for the low achieving student.

However, another explanation may be that by the time a low achieving student has reached his senior year in high school his learning patterns are so firmly established that either a longer period of time than one semester or a more intense involvement in tutoring is required to produce significant improvement.

The fact that no significant difference was found between the tutoring program and the traditional program in improving language usage and spelling skills for the freshmen may have resulted from a lack of emphasis by the tutors in language usage and spelling skills.

Recommendations

In view of the findings of this study the writer offers the following recommendations to schools of education and to public schools concerned with the education of the low achiever.

1. Tutoring studies utilizing statistical treatment should be conducted with low achievers in other subject areas in addition to English.
2. Experimentation should be encouraged in the development of materials to be used in tutoring sessions with low achievers.
3. Institutions involved in preparing teachers should explore methods for helping teachers learn to effectively direct

tutorial activities.

4. Further study is needed on the effect acting as a tutor has on self-image for low achieving students.
5. Research in developing standardized tests for the low achieving student should be encouraged.

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APPENDIX A

Tables 16-23

Table 16. Test Scores for Senior Students in Experimental Group.

Student	Intelligence Quotient	Diagnostic Reading Test			Language Usage			Spelling		
		Pretest	Posttest	Difference	Pretest	Posttest	Difference	Pretest	Posttest	Difference
1	108	69	67	- 2	59	61	2	7	7	0
2	102	62	58	- 2	64	76	12	7	9	2
3	99	32	37	5	61	64	3	8	9	1
4	97	62	64	2	39	50	11	7	8	1
5	96	61	65	4	63	61	- 2	6	8	2
6	94	59	54	- 5	51	48	- 3	10	11	1
7	94	41	49	8	56	62	6	5	9	4
8	93	42	47	5	50	52	2	12	16	4
9	93	45	46	1	56	62	6	5	5	0
10	91	61	66	5	52	54	2	5	7	2
11	91	48	51	3	66	67	1	12	13	1
12	91	52	53	1	40	49	9	4	6	2
13	90	45	49	5	45	61	16	7	8	1
14	90	39	48	9	48	57	9	2	5	3
15	89	39	61	22	45	55	10	7	9	2
16	89	41	46	5	39	45	6	7	9	5
17	88	55	56	1	49	50	1	6	6	0
18	88	48	49	1	49	60	11	5	5	0
19	88	18	25	7	30	34	4	4	8	4
20	87	35	38	3	44	49	5	11	12	1
21	85	31	32	1	50	52	2	8	9	1
22	85	32	41	9	36	40	4	5	9	4
23	84	37	34	- 3	46	49	3	7	7	0
24	84	42	41	- 1	41	39	- 2	7	8	1
25	83	15	17	2	21	32	11	5	6	1
26	82	22	32	10	41	43	2	6	7	1
27	82	27	29	2	39	50	11	10	10	0
28	82	37	36	- 1	40	51	11	5	8	3
29	82	46	49	3	34	36	2	4	5	1
30	79	43	45	2	39	42	3	6	8	2
31	76	43	44	1	22	26	4	6	11	5
32	75	7	15	8	17	19	2	5	7	2

Table 17. Test Scores for Senior Students in Control Group.

Student	Intelligence Quotient	Diagnostic Reading Test			Language Usage			Spelling		
		Pretest	Posttest	Difference	Pretest	Posttest	Difference	Pretest	Posttest	Difference
1	109	68	65	- 3	72	74	2	8	8	0
2	99	49	54	5	66	67	1	8	9	1
3	98	47	53	6	62	65	3	8	8	0
4	93	47	52	5	64	65	1	7	10	3
5	93	42	48	6	55	59	4	10	15	5
6	92	34	38	4	49	51	2	6	8	2
7	92	69	66	- 3	53	57	4	9	10	1
8	92	54	58	4	62	62	0	8	7	-1
9	91	34	38	4	40	52	12	8	9	1
10	91	45	51	6	44	49	5	10	14	4
11	91	70	75	5	66	67	1	8	9	1
12	89	20	30	10	23	26	3	5	7	2
13	88	48	50	2	37	43	6	3	7	4
14	87	45	58	13	45	49	4	4	8	4
15	87	29	34	5	51	47	- 4	4	10	6
16	87	31	44	13	56	57	1	5	9	4
17	86	46	46	0	52	56	4	5	6	1
18	86	25	26	1	49	51	2	7	8	1
19	85	33	46	13	46	45	- 1	9	6	-3
20	85	28	31	3	22	43	21	8	9	1
21	84	60	56	- 4	49	52	3	7	8	1
22	84	65	63	- 2	48	46	- 2	7	6	-1
23	83	38	39	1	52	50	- 2	7	7	0
24	83	39	41	2	49	51	2	10	9	-1
25	82	40	49	9	38	35	- 3	7	11	4
26	82	33	30	- 3	28	33	5	6	6	0
27	81	13	14	1	27	31	4	6	5	-1
28	80	31	28	- 3	41	50	9	5	7	2
29	80	35	37	2	30	44	14	6	7	1
30	79	13	17	4	32	37	5	8	8	0
31	79	30	38	8	21	28	7	2	7	5
32	76	21	24	3	35	33	- 2	6	8	2

Table 18. Test Scores for Freshmen Students in Experimental Group.

Student	Intelligence Quotient	Diagnostic Reading Test			Language Usage			Spelling		
		Pretest	Posttest	Difference	Pretest	Posttest	Difference	Pretest	Posttest	Difference
1	102	37	42	5	60	62	2	22	23	1
2	100	37	47	10	52	55	3	20	22	2
3	98	25	30	5	46	59	13	18	19	1
4	98	34	41	7	44	50	6	20	18	- 2
5	97	30	32	2	44	44	0	15	22	7
6	97	42	47	5	46	57	11	23	29	6
7	96	43	44	1	52	54	2	15	17	2
8	95	33	41	8	53	55	2	19	24	5
9	95	36	48	12	56	64	8	20	27	7
10	94	43	43	0	55	61	6	18	22	4
11	93	33	47	14	37	48	11	17	24	7
12	92	22	30	8	47	65	18	12	22	10
13	92	22	29	7	42	45	3	10	16	6
14	91	47	55	8	54	56	2	14	17	3
15	91	28	37	9	41	57	16	10	17	7
16	91	45	53	8	45	53	8	10	13	3
17	91	41	48	7	40	46	6	15	18	3
18	90	45	44	- 1	43	47	4	16	16	0
19	90	41	52	11	46	51	5	15	16	1
20	90	41	45	4	34	40	6	9	19	10
21	89	42	43	1	53	53	0	18	19	1
22	89	46	48	2	51	53	2	13	14	1
23	88	18	19	1	56	56	0	16	23	7
24	88	24	26	2	50	58	8	6	13	7
25	87	49	50	1	42	51	9	11	16	5
26	87	22	37	15	36	53	17	11	21	10
27	86	31	37	6	33	46	13	8	11	3
28	86	46	47	1	44	49	5	20	22	2
29	86	37	46	9	51	51	0	24	20	- 4
30	86	13	21	8	24	29	5	2	6	4
31	83	29	29	0	39	50	11	16	16	0
32	74	19	15	- 4	23	27	4	6	6	0

Table 19. Test Scores for Freshmen Students in Control Group.

Student	Intelligence	Diagnostic Reading Test			Language Usage			Spelling		
	Quotient	Pretest	Posttest	Difference	Pretest	Posttest	Difference	Pretest	Posttest	Difference
1	108	69	75	6	51	65	14	19	27	8
2	106	57	61	4	66	68	2	22	27	5
3	105	54	56	2	46	51	5	20	19	- 1
4	100	45	49	4	53	50	- 3	16	20	4
5	100	51	58	7	58	67	9	26	26	0
6	99	46	50	4	59	61	2	17	14	- 3
7	99	35	36	1	57	64	7	10	20	10
8	97	38	47	9	48	63	15	15	22	7
9	97	33	42	9	40	54	14	18	23	5
10	95	55	48	- 7	46	48	2	19	13	- 6
11	95	49	38	-11	55	54	- 1	18	18	0
12	94	28	38	10	43	44	1	4	10	6
13	94	37	40	3	42	43	1	10	12	2
14	93	42	40	- 2	53	59	6	12	18	6
15	93	47	56	9	49	48	- 1	22	26	4
16	93	43	37	- 6	56	53	- 3	14	24	10
17	92	50	51	1	41	48	7	19	25	6
18	90	29	25	- 4	50	49	- 1	20	20	0
19	90	34	35	1	48	54	6	18	22	4
20	88	29	30	1	50	57	7	6	8	2
21	88	33	32	- 1	56	52	- 4	14	16	2
22	87	38	32	- 6	49	51	2	15	20	5
23	85	26	31	5	51	56	5	10	14	4
24	84	18	21	3	25	32	7	10	13	3
25	84	39	42	3	48	57	9	28	24	- 4
26	81	34	43	9	40	51	11	13	21	8
27	80	25	20	- 5	35	34	- 1	13	10	- 3
28	80	22	29	7	24	24	0	7	14	7
29	79	31	37	6	35	43	8	20	18	- 2
30	78	17	23	6	34	42	8	7	12	5
31	78	25	22	- 3	52	54	2	9	17	8
32	75	50	52	2	42	54	12	13	17	4

Table 20. Teacher Ratings on Interest for Senior Students in Experimental Group.

Student	Pre Rating	Post Rating	Difference
1	Fair	Excellent	+2
2	Good	Excellent	+1
3	Good	Good	0
4	Good	Excellent	+1
5	Good	Good	0
6	Fair	Good	+1
7	Poor	Good	+2
8	Fair	Excellent	+2
9	Good	Excellent	+1
10	Fair	Good	+1
11	Good	Excellent	+1
12	Good	Good	0
13	Good	Excellent	+1
14	Good	Good	0
15	Good	Good	0
16	Poor	Excellent	+3
17	Good	Good	0
18	Poor	Good	+2
19	Fair	Fair	0
20	Fair	Good	+1
21	Fair	Good	+1
22	Fair	Fair	0
23	Fair	Good	+1
24	Fair	Good	+1
25	Fair	Good	+1
26	Fair	Good	+1
27	Good	Excellent	+1
28	Good	Good	0
29	Poor	Good	+2
30	Good	Good	0
31	Good	Excellent	+1
32	Fair	Good	+1

Table 21. Teacher Ratings on Interest for Seniors in Control Group.

Student	Pre Rating	Post Rating	Difference
1	Poor	Poor	0
2	Poor	Good	+2
3	Poor	Good	+2
4	Poor	Good	+2
5	Excellent	Excellent	0
6	Good	Good	0
7	Poor	Good	+2
8	Good	Good	0
9	Good	Excellent	+1
10	Fair	Good	+1
11	Good	Good	0
12	Fair	Fair	0
13	Good	Good	0
14	Fair	Fair	0
15	Excellent	Excellent	0
16	Fair	Good	+1
17	Excellent	Good	-1
18	Good	Good	0
19	Fair	Good	+1
20	Good	Good	0
21	Good	Good	0
22	Good	Good	0
23	Good	Good	0
24	Excellent	Excellent	0
25	Fair	Fair	0
26	Excellent	Excellent	0
27	Fair	Good	+1
28	Good	Good	0
29	Good	Excellent	+1
30	Poor	Poor	0
31	Good	Good	0
32	Good	Fair	-1

Table 22. Teacher Ratings on Interest for Freshmen in Experimental Group.

Student	Pre Rating	Post Rating	Difference
1	Fair	Fair	0
2	Fair	Good	+1
3	Poor	Fair	+1
4	Fair	Excellent	+2
5	Fair	Excellent	+2
6	Fair	Fair	0
7	Good	Excellent	+1
8	Good	Good	0
9	Poor	Fair	+1
10	Excellent	Excellent	0
11	Fair	Fair	0
12	Fair	Good	+1
13	Poor	Good	+2
14	Good	Excellent	+1
15	Fair	Good	+1
16	Fair	Good	+1
17	Good	Fair	-1
18	Fair	Good	+1
19	Poor	Good	+2
20	Fair	Fair	0
21	Poor	Good	+2
22	Poor	Good	+2
23	Fair	Poor	-1
24	Good	Good	0
25	Fair	Good	+1
26	Fair	Good	+1
27	Fair	Good	+1
28	Good	Excellent	+1
29	Fair	Good	+1
30	Good	Excellent	+1
31	Fair	Good	+1
32	Poor	Fair	+1

Table 23. Teacher Ratings on Interest for Freshmen in Control Group.

Student	Pre Rating	Post Rating	Difference
1	Fair	Good	+1
2	Good	Fair	-1
3	Good	Good	0
4	Fair	Fair	0
5	Fair	Good	+1
6	Good	Excellent	+1
7	Fair	Good	+1
8	Poor	Fair	+1
9	Fair	Good	+1
10	Fair	Good	+1
11	Good	Good	0
12	Fair	Fair	0
13	Fair	Good	+1
14	Fair	Excellent	+2
15	Fair	Good	+1
16	Good	Fair	-1
17	Fair	Good	+1
18	Fair	Good	+1
19	Good	Good	0
20	Good	Good	0
21	Good	Good	0
22	Good	Excellent	+1
23	Good	Good	0
24	Fair	Fair	0
25	Good	Good	0
26	Fair	Good	+1
27	Fair	Fair	0
28	Poor	Poor	0
29	Good	Good	0
30	Good	Fair	-1
31	Good	Good	0
32	Good	Good	0

APPENDIX B

Validity and Reliability of Test Instruments

Validity of Henmon-Nelson Tests of Mental Abilities

Since there is no direct method of determining validity of tests of mental ability, the authors of the Henmon-Nelson Tests used several ways to judge its objectivity. Lamke (28, p. 9) describes the care with which items for inclusion in the final tests were selected.

In the construction of the Henmon-Nelson Tests, great care was exercised in the choice of items so as to insure all possible validity. Originally, 297 items were constructed and submitted to experienced teachers for their criticisms. From this number, 250 items were then selected and administered in two forms. The pupils to whom they were administered were divided into three groups of inferior, average, and superior ability, as indicated by the composite score on three well-known group tests of mental ability. Any item was discarded that did not show a significantly larger number of correct responses in passing from the inferior to the average and then to the superior group. The items that remained were incorporated into a second experimental test, each form containing 101 items. On the basis of trials with these forms, 90 items for each form of the test were chosen which were most discriminating and which insured, insofar as possible, identical difficulty in two forms. These forms became the original edition of the Henmon-Nelson Tests of Mental Ability. Similar care was used in the construction of other forms and levels.

In 1953, work began on the Henmon-Nelson Revision. Tests taken by students in seventy-seven communities in twenty-four states (representing a cross-section of the various sizes of schools and geographical regions in the United States) were obtained for purposes of item analysis. A process of item analysis was used which associated with each item indexes showing its variance, reliability, and its contribution to test reliability. With the aid of electronic punched-card data-processing machines, some 20,000 major calculations were made in the course of item analysis. The items showing superior discriminating power and other desirable characteristics were retained for the revision. When it was possible to strengthen the purpose that an item serves in the test, the item was reworded.

Two parallel forms were constructed for each of three levels: grades 3-4, 6-9, and 9-12. Items were matched on the three indexes (of variance, reliability, and test reliability) as parallel forms were constructed; the cumulative sums for each pair of indexes were almost identical at each decile. The pool of items available (from three forms of the original edition at each of two levels) made it possible to put items with similar indexes and similar content in the same relative position in the two new forms at each level. For example, if item 27 in Form A, Grades 3-4, employs verbal analogy, so does item 27 in Form B.

Item difficulties were arranged to form a rectangular distribution so that a rank-ordering of persons would be obtained with approximately equal precision over all parts of the range, and the reliability of discrimination would be maximized. Item difficulties were distributed so that the tests would be of utmost practical use. For example, in the IQ table for Grades 3-6, the table extends to an upper limit of 168 for pupils seven years-three months old, but only to an upper limit of 141 for fourteen-year-olds. Pupils who are fourteen years of age and still in the sixth grade or below rarely have very high IQ's; hence, a higher upper limit is not needed for this age at this level. Pupils who are seven years-three months of age and in the third grade rarely have low IQ's; hence, a lower limit of 85 will almost invariably be found adequate in this case.

Care was used in the construction and selection of items to avoid using those that might appeal more to one sex than to the other. A random sample of 200 boys and 200 girls was obtained from the entire population; neither the means nor the standard deviations of the test scores (on Forms A and B, Grades 9-12) for these two groups were significantly different at the 5 per cent level.

The authors also made numerous comparisons with other tests which have proved to be useful measures of mental ability. They found it had a correlation coefficient .50 to .83 with the California Test of Mental Maturity. This study was made with 475 ninth and tenth grade high school students.

Reliability of Henmon-Nelson Tests of Mental Abilities

The authors of the Henmon-Nelson Tests of Mental Abilities claim reliability of over .90. Two methods for determining reliability coefficients range from .904 to .948, while alternate-forms reliability coefficients show a range from .895 to .938. One hundred-fifty cases at each of the grade levels, 9 through 12, were used to compute these coefficients.

Reliability of Survey Section
of the Diagnostic Reading Tests

The authors of this test used the Kuder-Richardson formula 21 on samples of N equal to 100 for each of the grades 7 through 12 and reported a median test-retest reliabilities as follows:

Rate of Reading	.80
Story Comprehension (items 1-20)	.74
Vocabulary (items 21-80)	.89
Comprehension (items 1-20 and 81-100)	.83

A total comprehension score (items 1-100) can be used as an evaluation of the over-all reading skills of an individual. The median reliability of this score is reported to be .91. Treggs (52, p. 1) identifies the purposes of the subtests as follows:

1. General Reading: The purpose of this section of the test is to measure the student's usual rate of reading interesting story-type material with a generally simple vocabulary

load and to measure the extent to which he comprehends what he reads at the rate recorded by this test. (15 minutes)

2. **Vocabulary:** This section of the test is designed to secure a general measure of meaning vocabulary. It is composed of sixty items drawn from general vocabulary and from the vocabularies of English, mathematics, science, and social studies. Each item consists of a definition followed by five words, one of which is an appropriate response for the definition. (10 minutes)
3. **Comprehension:** This section measures study-type reading skills. It consists of four selections of reading material similar to that found in textbooks in social studies and science. Each selection is followed by five questions based upon the reading material in the selection. (15 minutes)

Validity of California Achievement Surveys

Items in these Achievement Surveys have been selected from the widely-used California Achievement Tests. Teigs (49, p. 4) in discussing the validity of these tests states:

They measure the most universal subject matter objectives of the curriculum; namely, the basic skills of learning. Mastery of such tools constitutes a major objective of every school, while variations in the student's functional efficiency with the basic tools are relatively independent of specific courses of study or local deviation of specific curricular emphasis. Consequently, these tests can be used to evaluate subject mastery by students in all schools.

The original selection of all California Achievement Test items was based upon a careful study of nationally developed curriculum objectives as well as representative state and city courses of study. In 1957, the tests in the battery, with the exception of the Spelling test, were re-submitted to curriculum experts, research specialists, college professors, teachers, and state department of education personnel for critical review. They were carefully checked at that time. This was necessary in order to ensure acceptability according to

current standards.

The raters gave their reactions to over-all content and balance. They also evaluated each item of one form, which was typical of all the test forms. On the basis of their responses, many important changes and additions in content were made. The resulting improvements made the parent test one of the most carefully developed and diagnostic batteries available today.

Reliability of California Achievement Surveys

The coefficients of reliability for the English and Spelling sections of the Surveys of Achievement are given as .88 and .74 respectively. The coefficients were computed by using Kuder-Richardson formula 21. The authors have charts in the manual which show the reliability coefficients, mean scores, standard deviation and standard error or measurement, which they believe to be more helpful in interpreting individual scores than reliability coefficients.

APPENDIX C

Sample Student Guide

Grade

Name _____

Vocabulary _____

Period _____

Check Test _____

Date _____

Short Answers _____

Tutor _____

Essay _____

"Hurricane" (Top Flight pp. 250-256)

VOCABULARY

Look up the following words in the dictionary and write the definition which best fits the word the way it is used in the story.

1. Girders
2. Mist
3. Decent

CHECK TEST

From the two choices in parenthesis, select the one which best completes the sentence according to the story and write it in the blank.

1. _____ liked to drive with his car top down. (Larry, Mr. Rockwell)
2. The Rockwell family drove to the _____ Ocean for their vacation. (Atlantic, Pacific)
3. The first member of the Rockwell family who decided to go for a walk on the beach was _____. (Lynda, Don)
4. _____ wanted to play checkers. (Mrs. Rockwell, Lynda)
5. Mr. Rockwell didn't want Don to drive the car into town for the checkers because Don was _____. (angry, wet)
6. Don took his time about driving into town because _____. (his father had asked him to be careful, he was glad to be off by himself)

7. Don first heard about the hurricane from _____.
(a service station attendant, a waitress)
8. Mr. Rockwell's car _____ a radio. (had, didn't have)
9. Don was stopped by the police because _____.
(he was going too fast, they wanted to warn him to get off the road)
10. Mrs. Rockwell's name was _____. (Lynda, Janet)
11. _____ drove the car when the family was trying to find a safe place to be during the storm. (Don, Mr. Rockwell)

SHORT ANSWERS Answer the following questions briefly on this paper.

1. Why is Don unhappy as his vacation begins?
2. What reason did his father have for refusing to allow Don to go to Wyoming?
3. Why was Don's family not aware of the coming hurricane?
4. What made Don decide this had not been a ruined summer?

ESSAY Write a paragraph on one or both of the following as time permits.

1. Do you think Mrs. Rockwell's reason for refusing to let Don go to Wyoming was a good one? (Use at least two sentences to explain your yes or no.)
2. Describe as best you can what kind of father Mr. Rockwell was.

Freshman students are not to write below this line - for official use only)

Tutor _____

The strengths of this paper were:

Weaknesses, if any:

Reader _____