THE EFFECTIVENESS OF USING WORKBOOKS IN THE TEACHING OF EIGHTH-GRADE ENGLISH GRAMMAR

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DISSERTATION

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CHAPTER I

INTRODUCTION

Many educators object to workbooks in the classroom because of their misuse (6, 9, 10, 15, p. 201). Soon after the introduction of workbooks in the 1920's, teachers began to rely on them more and more, until they were eventually being used in almost every academic subject. While their utilization had seemed at first to be a valuable innovation, it soon appeared that workbooks were becoming an overused crutch, and many teachers and supervisors abandoned them. Although such a reaction was certainly understandable, it may have been unfortunate. Some authorities state that carefully selected workbook exercises can serve as a valuable instructional aid in subject areas in which a certain amount of drill work is necessary (15, p. 201). Because of the amount of drill that is often presented in teaching English grammar, it seems probable that workbooks could be utilized effectively in this subject. The present investigation was designed to examine such a possibility by observing differences that occurred in selected measurable aspects of learning when students who used workbooks as a source of drill work in English grammar were compared with students who did not.

Purpose of the Study

The purpose of this study was to examine selected effects of using workbooks in the teaching of eighth-grade English grammar. The study considered the effect that workbooks had on students in terms of the following areas:

1. Achievement in grammar as measured by a standardized test.

2. Grades in English.

3. Attitudes toward English.

4. Performance in English composition.

5. Achievement in spelling as measured by a standardized test.

Hypotheses

The following hypotheses were tested:

1. Students who use workbooks will show a significantly greater mean gain on a standardized English usage test than will students who do not use workbooks.

2. Students who use workbooks will make significantly higher grades in English than students who do not use workbooks.

3. Students who use workbooks will show a significantly greater mean gain in attitude toward English than will students who do not use workbooks.

4. The use of workbooks will have no significant effect on students' performance in English composition.

5. The use of workbooks will have no significant effect

on students' performance on a standardized spelling test.

Background and Significance of the Study

In 1923 the Webster Publishing Company of St. Louis published Sharp's English Exercises for High School (8). This publication was a ninety-three page booklet of drill exercises designed for the teaching of English grammar and usage. Although the name "workbook" was not applied until some years later, this publication was the first of its kind to be used in the public schools. The publisher recalls that the idea for such a publication came as a result of seeing the overflowing wastebasket in almost every classroom that he visited:

> Most of this work had been copied from the board by the pupils. The teacher had had to prepare the drill material the day before or during the day . . . Not only had the teacher had to take time out to write these exercises on the board, but the pupil had had to laboriously copy the material. There was loss of teacher's time and there was loss of pupil's time. How could a more economical way be found to do this work? (8, p. 64)

As a result of this search for a more economical way to provide drill exercises for students, the Webster Company engaged a high school English teacher to write the drill exercises that became the first workbook. The resulting booklet was received enthusiastically by teachers, and other companies began publishing their own. During the next twenty years the increase in the use of these materials was phenomenal. By 1946 thirty-seven million workbooks were being sold annually (8). However, despite this impressive sales figure,

some authorities were beginning to have doubts about the value of workbooks. In a book published this same year, Robert C. Pooley, a professor at the University of Wisconsin and for many years an authority on the teaching of English, was less than enthusiastic concerning their use: ". . . most workbooks are unreliable and are losing favor with conscientious teachers" (15, p. 201). However, he did indicate that he felt workbooks had some merit when used discriminately: "Published workbooks may be used for usage practice provided they have been chosen after careful study to be sure that the content of the exercises is suitable to the grade level" (15, p. 201).

The "loss of favor" that Pooley mentioned soon became outright criticism on the part of many teachers. Typical of this criticism is the following excerpt from an article published in a recent issue of Childhood Education:

> Workbooks as educational tools reduce the effectiveness of the teacher; they reduce the effort the teacher must put forth to help the student gain a mastery of the material; they permit laxity and subterfuge in the pupil, resulting in poor education (6, p. 85).

One of the most common objections made by English teachers is that "workbook children are weak in writing complete sentences and are often poor in written expression in general" (11, p. 94). This objection is the basis of an opinion formed by many teachers who dislike workbooks. Although no research has been done on the direct effect of workbook use on written expression, other studies seem to indicate that

there is little connection between various instructional methods and proficiency in composition (2, 10, 14, 17). After conducting two studies of the relationships existing between knowledge of grammar, both traditional and structural, and skill in reading and in written composition, O'Donnell reported in 1964 that "It is extremely doubtful that mastery of either structural or traditional grammar will automatically result in proficiency in reading and writing" (14, p. 467).

Heys conducted a study in which he questioned the "theme a week" approach (17). One class wrote each week, while another was excused from practically all writing and, instead was urged to read extensively and to discuss in class the style and construction of the books read. On the basis of a standardized writing test administered at the end of the year and a teacher-graded composition, the gains in composition for the two classes were roughly the same.

From a survey of errors made by fifty-nine eleventh-grade students in English composition, Baird concluded that a study of traditional grammatical principles has little, if any, value in improving student writing and that the number of compositions per se does not produce better writing (10). Recent research conducted by Burton and Arnold found no evidence that more frequent writing produces better writing (2). No significant differences in writing achievement were found, regardless of the type of writing program used.

While the studies that have been mentioned have nothing to do with the effect of workbooks, they do indicate that the type of instruction used in the English class seems to have little to do with a student's writing ability, although the alleged detrimental effect on a student's ability to write has long been one of the major criticisms advanced by workbook foes.

While critics talk of "exposing the empty ritual of the workbook" (10, p. 674) and speak of "the stigma attached to workbooks" (9, p. 218), their use is still widespread. In 1962 elementary schools alone spent $43,210,000 on workbooks (11). Though many educators speak against their use, teachers continue to use them. The question of whether or not these materials should be employed is open to debate. Although there are many people who claim to know the ill effects of workbooks, most of the theories are based entirely on opinion. Very little research has been done in this area. In 1955, after reviewing educational literature, Joseph Melton wrote in The Grade Teacher: "Evidence of the value of workbooks derived from research is meager. Research is almost devoid of controlled experimentation in this field" (13, p. 60). Since that time, little more has been done. No studies have been conducted that purposely examined the effects of using workbooks in the teaching of English grammar. However, in a study designed to measure the effectiveness of a writing

laboratory at Purdue, Maize tested a control group that used English grammar workbooks (12). Measured by a standardized test, the students in this group made gains in grammar and usage that were significant at the .01 level. While Maize was not interested in showing the results of using workbooks, his study clearly indicates that they can be used effectively to teach English grammar.

A number of studies have examined the use of workbooks in subjects other than English. In 1951 Schunert investigated the relation between mathematics achievement and certain factors associated with teaching (16). One of the variables that he examined was the use of workbooks. According to his results, their use had no significant effect on achievement in mathematics. Different results were obtained seven years later by Durr, who found that elementary pupils using arithmetic workbooks made greater gains in the fundamental operations of arithmetic than children who did not use them (3).

There have also been studies of the effects of workbooks in the teaching of reading. Again, the results have varied. In 1957 Sartain found that low-ability third-grade groups using reading workbooks learned more vocabulary than similar groups who participated instead in other extra activities (3). Two years later Haynes compared a group of first-graders who used reading workbooks with a group that engaged in many concrete experiences and found no significant differences in

reading achievement (3). The following year Doctor found that children who used workbooks in grades two through four showed significantly higher achievement in comprehension and vocabulary scores than did other groups (3).

In view of the studies in which workbooks have been shown to contribute to achievement in subject areas other than English, and the study by Maize that showed significant gains by college freshmen in a control group using English grammar workbooks, it seems reasonable that they can be used effectively to increase achievement in English grammar.

Limitations of the Study

1. This study was limited to 160 eighth-grade students in four selected junior high schools in a large metropolitan school system of North-central Texas.

2. This study was limited to a period of approximately eight months.

Definition of Terms

1. In this study "grammar" is used as a general term that includes usage, mechanics, punctuation, capitalization, and diction.

2. In this study "workbook" refers to any of the commercially produced paper-back exercise books in which the student works the exercises by marking or writing in the book itself. The workbook differs from a programmed text in that the correct response is not revealed to the student in the

workbook.

Procedures for Collecting Data

The experimental group for this study consisted of eighty students selected from four eighth-grade English classes that were taught in the usual way except that drill work in grammar was done in workbooks. The control group consisted of eighty students selected from four eighth-grade English classes that were taught without the use of workbooks. The experimental group and control group were equated on the basis of sex and time of day for English class and controlled so that there were no significant differences in means between the two groups in intelligence test scores and the previous year's grades in English.

The classes involved in this study were taught in four schools by teachers selected on the basis of willingness to participate in the study, a minimum of three years teaching experience, and twenty-four semester hours credit in college English. Each teacher taught one experimental class and one control class. Two teachers had experimental classes in the morning and control classes in the afternoon, with the other two having the times reversed. Each teacher was instructed to organize the content of his course according to the course of study that was already being used in this school system, using as nearly as possible the same methods in his experimental class that were used in his control class, with the only

difference being the type of drill exercises used.

When drill work in English grammar was assigned, the experimental group used workbook exercises. In teaching the control classes, the teachers were free to use any type of drill exercises other than workbooks. Complete records were kept on the materials and activities used in both classes. During the year each teacher was visited four times by the English supervisor in order to observe the methods that were being used in the two classes. The fact that each teacher had a control class and an experimental class was expected to balance differences in teacher effectiveness.

At the beginning of the experiment Remmer's Test of Attitude Toward Any School Subject and the California Language Test were administered to each student in the study, and alternate forms were administered near the end of the school year. The language test consists of two parts. The first part, which gives a score in mechanics of English, consists of items that test capitalization, punctuation, and word usage. The other part of the test gives a score in spelling.

Also at the beginning of the experiment, each student was required to write a composition on an assigned topic. At the end of the year each student wrote a second composition, and this was compared with the first in order to determine progress in writing. At the conclusion of the experiment each composition was graded by three English teachers who

each had at least five years teaching experience. The compositions were scored on the basis of a one-hundred point rating scale that was adapted from a scale used by Buxton in a study at Stanford University (3). In using his scale with two raters, Buxton was able to achieve a reliability coefficient of .90. (A copy of the scale used in the present study is included in the appendix.)

Before the compositions were rated, a meeting was held with each grader in which an explanation was made of the rating scale, and sample compositions were evaluated by the graders in order to gain practice using the scale. In order to assure a high degree of reliability in the ratings, each grader was asked after the initial practice period to score the same twelve sample compositions. Product moment correlation coefficients were obtained from the ratings of the three graders on these sample compositions.

When the actual rating began, each grader worked independently. All names were removed from the compositions so that no one could know whose paper he was grading, and since all grading was done at the conclusion of the experiment, there was no way for a rater to know which essays were to serve as pre-tests and which as post-tests. After each composition was scored by each grader, the three scores were averaged, and the final score for each composition was the mean of the three ratings.

At the conclusion of the school year each student's grade

in English was taken from the school's permanent records.

Procedures for Treating Data

The hypotheses tested in this study have been restated as null hypotheses:

1. There will be no significant difference in mean gains on test scores in mechanics of English between the control group and the experimental group.

2. There will be no significant difference in English grades between students in the experimental group and the control group.

3. There will be no significant difference in mean gains in attitude toward English between the control group and the experimental group.

4. There will be no significant difference in mean gains in composition scores between the control group and the experimental group.

5. There will be no significant difference in mean gains in spelling scores between the control group and the experimental group.

For testing the first hypothesis, the mechanics of English scores from the two administrations of the California Language Test were used. The difference between the pre-test and post-test scores was found. Mean gains for the control group and mean gains for the experimental group were compared statistically, using Fisher's *t* technique to test for significance

of difference.

For testing the second hypothesis, letter grades taken from students' permanent records were converted to numerical values: A = 5; B = 4; C = 3; D = 2; F = 1. The mean scores for the experimental group were compared with the mean scores of the control group in a test for significant difference.

Hypotheses three, four, and five were tested in the same way as hypothesis one. Scores used for testing hypothesis three came from the two administrations of Remmer's Test of Attitude Toward Any School Subject. Scores used for testing hypothesis four came from the two sets of compositions. Hypothesis five was tested with spelling scores from the California Language Test.

Each hypothesis was first tested in terms of the results of the entire experimental group and the entire control group. Each group was then divided into three subgroups based on results of mental ability test scores, and each hypothesis was tested in terms of the results for pupils of high, average, and low ability levels.

The level of significance for rejecting the null hypothesis was arbitrarily set at .05.

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CHAPTER II

SURVEY OF RELATED LITERATURE

Controversy concerning the use of workbooks has existed almost since their introduction some forty years ago. Workbooks are accused by many of causing all sorts of educational evils, and at the same time they are lauded by others as being sound, effective instructional aids. Melton (32) points out that the apparent reasons for the controversy are that some workbooks are poorly prepared and that some poorly prepared teachers have misused them. He feels that neither circumstance should be the basis for wholesale condemnation of workbooks. Other critics have not been so generous. Harlow (20) states that workbooks reduce the effectiveness of the class and of the teacher; they permit laxity and subterfuge on the part of the pupil, resulting in poor education. Gray (19) takes the opposite view. He asserts that the modern workbook supplies all the necessary supplementary and enrichment material necessary for a good educational program, in addition to saving the teacher and the student thousands of hours of wasted labor.

The two most recent articles concerning workbooks to appear in professional journals express positions just as contradictory as the ones that have been mentioned. In a

1967 issue of Childhood Education, Veatch (52) states that there is no such thing as a well-planned workbook. She says that workbooks are nothing but time killers and should be viewed as such. In the same year Brinkman (7) writes that a workbook in the hands of a good teacher can be "a constructive, productive teaching tool." So the controversy concerning the use of workbooks remains today in much the same state that it has existed for several decades. Some educators speak for the workbook; some speak against it.

The origin of the workbook is not completely clear. Johnson (25) claims to have published the first one in 1923. No doubt this was the beginning of the English grammar workbook, although the name "workbook" was not applied until some years later. Tryon (49) writes that the first social studies workbooks began to appear about this same time. He thinks that the movement which developed after 1924 was a merging of the outline-book and the map-book, which can be traced back to 1890 and 1904, respectively. There were also numerous laboratory manuals for science used in the middle twenties that probably contributed to the development of the workbook. At any rate, by 1930 the movement was in full swing. By this time the peak number of new publications a year was thought to have been reached. During the 1930's there were approximately 200 different workbooks available in social studies alone (49). In 1935 Goodykoontz (18) reported that eight publishers alone were issuing 283 different workbooks and that another company

specializing in general workbooks (those that do not apply to a particular textbook) was supplying an additional 123. By 1940 Hockett (22) reported that the growth in the use of workbooks in the past fifteen years had been "phenomenal."

Despite this wide use, criticism had already begun, and the controversy between workbook users and their critics was becoming well established. The first articles in educational journals dealing with this subject began to appear in 1931 (32), and by the middle thirties such a controversy was apparent in the literature. In 1933 Van Liew (51) wrote that inspection of the publications on the market at that time clearly showed that many of the authors had given little or no heed to principles underlying studying and learning. However, he did conclude that when used properly a workbook could guide and aid a pupil's study and result in satisfactory learning. The following year Maxwell (31) reported that many supervisors had found serious misuse of workbooks, with many teachers following them slavishly. He also stated that the schools of America had adopted and widely accepted a technique without first testing its validity. In examining educational literature up to that time, he had found only one report of a meticulous investigation of the use of workbooks. He urged careful scrutiny of a movement that had gained such momentum in so short a time.

More than twenty years later Melton (32) made much the same observation. He reported that evidence of the value of

workbooks derived from research was meager and that there had been practically no controlled experimentation in this field.

Despite the apparent controversy and the lack of good research in the area, workbooks continued to be used widely. In 1946 thirty-seven million copies were sold (25). By 1962 the sales of workbooks netted $43,210,000 in the elementary schools alone (28). Brinkman (7) reports that in 1965 two to three workbooks per pupil were purchased by the elementary schools throughout the country, and one to two per high school student. In this 1967 article he further stated that while school enrollments have increased approximately fifteen per cent in the past five years, the sale of workbooks has increased more than forty per cent.

It is apparent that regardless of what writers of articles in educational journals have to say both for and against workbooks, they are being used in great numbers. The attitude of many teachers seems to be that they can be used wisely, even though they often are not. This attitude goes back as far as 1936, when Vreeland (53) wrote that the workbook could be either an utterly valueless instrument or an indispensable tool, depending upon the way it was adjusted to the instructional situation. Zak (58) expressed the same idea twenty-five years later when he stated that most teachers have neither the creative talent nor time to develop worksheets comparable to the ones found in the better workbooks. He made no argument against workbooks <u>per se</u> but against some

teachers' excessive dependence upon them.

Teacher and Student Opinions

Some of the earliest investigations in the area of workbook use were studies of teacher opinion. Goodrich (17) did a study of this type in 1931 in which he received questionnaires from 232 supervisors and teachers who had used workbooks. Of the 232 responders, only one felt that the workbook was educationally unsound. Twenty-nine expressed the opinion of limited usefulness, while the remaining teachers felt it to be useful or very useful. Teachers responded in a ratio of six to one that the workbook helped the teacher by saving time. They agreed at a rate of fifteen to one that pupils enjoyed using them. Despite this general acceptance, a number of questionnaires stated instances in which teachers had overused them.

A similar questionnaire study was done by the Association for Childhood Education in 1939 (4). Ninety per cent of the supervisors and principals in this study and eighty-six per cent of the teachers reported a desire to make regular or occasional use of reading workbooks. However, in reporting the results of this survey, the association felt it necessary to caution the reader that the questionnaires had contained reports that workbooks were frequently being used as busywork.

In 1940 Hockett (22) published the results of a survey of 259 reading teachers and supervisors in California. Seventy

per cent of the responders reported using workbooks. Of the twenty supervisors questioned, about half thought they should be used more, and about half thought they should be used less. Only one thought they should not be used at all.

In 1961 Black (5) reported a national survey in which questionnaires were mailed to all school districts in the United States with a population over 100,000. Responses were received from ninety per cent of these ninety-nine major school districts, and the results showed that reading workbooks were being used in nearly three-fourths of them.

Extensive use of reading workbooks in college was shown by a report in 1959 (33). In a survey of reading programs in 233 colleges, workbooks were shown to be by far the most popular plan of instruction. Ninety-six institutions reported their basic plan of instruction to be group practice using workbooks supplemented by individual practice with mechanical aids. The second most popular pattern, reported by fifty-one schools, was basic group practice with mechanical aids supplemented by individual practice with workbooks.

In 1959 reading workbooks were evaluated by six-hundred teachers in Los Angeles schools (5). The teachers believed the greatest proportion of them to be satisfactory and favored their use. In another portion of this same project approximately two-hundred sets of teacher-prepared follow-up material were contributed by teachers not using workbooks. This material was then evaluated by the six-hundred teachers

who had evaluated the workbooks, using the same criteria. The mean rating of these materials was substantially below the mean rating of the workbook materials, indicating that although it is often claimed that conscientious teachers can prepare their own material that is equal to that of the workbook, they seldom do.

Two published studies have dealt with student opinions concerning workbooks. In 1942 Brown (8) used a questionnaire in two high schools and found that eighty-three per cent of the students favored the use of workbooks. While this study concerned workbooks used in several subjects, a study reported by Schiavone (43) in 1960 dealt only with reading workbooks. When questionnaires were administered to 450 students, over three-fourths said they enjoyed workbooks. When asked what activity in the reading program had helped them most, workbooks were reported more than any of the other seven activities.

Workbook Use in Reading

As has been shown in the studies of teacher and student opinions, the workbook has gained its greatest acceptance and use in the field of reading. In the thirty-sixth yearbook of the National Society of the Study of Education, a national committee of reading specialists endorsed workbooks as a means of systematically providing for individual differences (4). As early as 1931 Gates (15) introduced a reading program

primarily of the use of the workbook. He stated a belief that by meeting the situations and doing the projects suggested in the workbook the pupil could develop the skills necessary for good reading. Burton (9) states that while there are many criticisms of reading workbooks, most of the criticisms are aimed at their misuse rather than at their content. Betts (4) says that a differentiated program of instruction can be furthered by the careful use of workbook activities. However, he feels that such differentiation can be accomplished by a conscientious teacher without the use of workbooks. Tinker (48) tells us that workbooks can make an important contribution to the development and maintenance of many of the reading skills. He also points out some of the dangers in their misuse, the chief one being their degeneration into mere busywork.

While the above is mere opinion, a number of experimental studies have been carried out using workbooks in the teaching of reading. More experimental work has been done with them in this subject area than in any other.

In 1957 Felton (14) reported a two-year study in which first-grade students used reading workbooks. In the second year of the study she compared groups using the workbooks with a control group that did not. She found no statistical differences between groups and concluded that reading can be successfully taught with or without the use of workbooks. She might have found a difference if she had used some grade

level other than the first, because there is some evidence that the workbook is not effective in the initial stages of the reading program. This can be concluded from a study reported two years later by Ploghoft (40). In this study one group of kindergarten students used reading readiness workbooks while a similar group participated in other readiness activities. Upon entering first grade the following year, the two groups showed no important differences on a reading readiness test. Blakely and Shadle (6) conducted a similar experiment at the kindergarten level and found no significant differences in reading readiness between groups that used workbooks and groups that used an "experience program."

In a very extensive study in the public schools of Los Angeles, reported by both Black (5) and Doctor (12), groups using workbooks were matched and compared with groups not using workbooks in eighteen different schools. It was found that in the first grade non-workbook children had gains significantly higher than those using workbooks. In grades two, three, and four, workbook groups made significantly higher gains. In grades five and six differences were not significant. Doctor concluded from these results that workbook materials are not desirable for the purpose of initiating the reading program. The three preceding studies verify such a conclusion. It is further verified by a study in which Haynes (11) also found no important differences in reading achievement between first graders who used workbooks and

students who used other activities.

Aside from the statistical results of the Los Angeles (12) study that has been reported, another interesting result was that when teachers were required to keep records of the time spent organizing materials, it was discovered that teachers of the non-workbook program were required to spend twenty minutes a day more than the workbook teachers.

Doctor further concluded that for most students reading workbook usage has a peak efficiency in grades two, three, and four. Somewhat similar results were reported by Sartain (42), who experimented with ten classes of third graders, half of whom used reading workbooks. The other half took part in extra enrichment activities. Sartain found that less capable students who used the workbooks made gains in reading vocabulary significantly superior to those made by students who did not use workbooks. Among the capable students there was no meaningful difference. Sartain concluded that when workbooks are properly used, they can contribute as much to the reading growth of capable third-grade pupils as certain extra enrichment experiences; less able pupils are likely to profit more from well-taught workbook lessons than from other experiences.

In 1961 Iberling (24) experimented with phonics workbooks at the second, fourth, and sixth-grade levels. Although he found no important differences in reading comprehension, the second grade students in the study showed significant

improvement in spelling.

Not all research in using reading workbooks has been at the elementary school level. Walker (55) found no important differences among seventh-grade classes using S. R. A. Reading Laboratory, individualized instruction, and conventional workbooks. He did find that students of below average ability made significant gains in the classes using S. R. A. materials and individualized instruction. However, many would consider the S. R. A. materials to be a form of workbook, and the individualized instruction received by one of the experimental groups consisted in part of work from many different workbooks, whereas the control group was restricted to only the workbook that accompanied the textbook used in the course.

Noall (37) performed a study at the high school level which attempted to determine if students could profit from an individualized program of instruction that was largely self-directed. This was not an investigation of the effectiveness of workbooks, but much of the material used was taken directly from published workbooks. On pre-test post-test gains for all three measuring instruments used in the study, students showed gains that were significant beyond the one per cent level of confidence.

A study at the remedial reading clinic at the University of Florida compared groups of college students using a workbook, an audio-visual instrument, and an individualized

self-improvement program (47). No meaningful differences were found among the three groups in rate of reading, vocabulary, or reading comprehension.

Research in reading instruction indicates workbooks are not the best form of instruction for initiating the reading program; workbooks are superior to most other types of reading instruction in the middle primary grades; remedial instruction in reading at the junior high school, high school, and college levels can be carried out as successfully with a workbook program as with other forms of instruction.

Workbook Use in Social Studies

Although workbooks have been used widely in the social studies, their acceptance by experts in this area has been limited. As early as the 1930's there were approximately two-hundred different workbooks available in social studies (49). In 1931 Wesley (56) noted the lack of experimental data on the value of workbooks. While he gave them limited approval, he expressed serious doubts about their overall value, objecting to the fact that social studies workbooks often assist the student to such an extent that he has little thinking and organizing left to do.

In an appraisal of social studies workbooks in 1938, Tryon (49) also gave limited approval of their use, but he expressed the idea that when duplicating materials became available to all teachers, they could prepare their own

materials that would prove to be more effective than commercially produced workbooks had been. The same year Shoen (46) wrote that in order to be worthwhile in social studies instruction, workbooks must no longer be restricted to questions requiring only that the student answer directly from the textbook, but must introduce activities that require real analysis of the material and develop skill in understanding.

The earliest research dealing with workbooks in the social studies was reported in 1933 by Cressman (10). In teaching a unit on moral conduct to two seventh grade social studies classes, he used a workbook in one and class discussion in the other. From test results at the end of the experiment he concluded that the workbook method had been superior to oral class discussion. However, the description of the test upon which he based his results makes it appear to be of doubtful validity.

In 1939 Motter (35), after noting "the almost total absence of research on the value of the workbook," performed an experiment in eighth-grade social studies to determine the value of a workbook in teaching factual material. Using two matched groups, he found no significant difference between the group that used workbooks and the group that used recitation and discussion based on material from the regular textbook.

In 1958 Giannivi (16) reported on her efforts to determine the value of a workbook in teaching high school history

students of below average intelligence. She concluded that the workbook "worked unexpectedly well. The workbook provided the slow student with a definite task that he could accomplish, while it did not hold back the brighter student." It is apparent that this report was not based on a controlled experiment, but was the opinion of a teacher who subjectively felt that she had achieved success with a certain method. Also, it is not completely clear whether Giannivi used the term "workbook" to refer to a commercially prepared exercise book or a student-made notebook.

Research on the use of workbooks in the social studies is very limited. The small amount of published research that is available indicates that students who use workbooks in social science do as well as those who do not.

Workbook Use in Science and Mathematics

One of the earliest studies of the effectiveness of using a workbook was published by Hurd (23) in 1931. He compared a group of high school physics students who used workbooks with an equated group who did not and found that the workbook group made gains on a standardized test that were significantly higher than those of the other group.

A later experiment in science education was carried out by Peterson (38). He compared general science students who used workbooks with students who prepared their own notebooks. He concluded that there was little difference in the effective-

ness of the workbook and the notebook as a device for teaching general science in grade nine. He also stated that one teacher may secure better results with workbooks and another with notebooks.

Durr (13) reported an experiment using workbooks in mathematics. Using students in grades four through eight, he found that gains made in the fundamental operations of arithmetic by students using workbooks were significantly higher than gains made without workbooks.

Shunert (44) reported no meaningful relationship to exist between workbook use and achievement in mathematics. His study was not designed primarily to test the effectiveness of workbooks; other variables considered were type of assignment, frequency of testing, use of supervised study, and use of reviews.

Andreen (2) did a study with arithmetic workbooks that did not attempt to directly measure the effect on the student. Instead, he attempted to determine the quality of workbooks by evaluating their contents according to a set of criteria that had been developed by twenty-eight specialists in the field of learning. He concluded that many of the available workbooks were lacking in features considered by the experts to be necessary for effective learning. He also attempted to determine to what extent the workbook was being misused by conducting controlled observations in the classrooms of forty-nine elementary schools that used workbooks. From these

observations he concluded that a majority of teachers depended on the workbook to such an extent that their personalities were almost entirely removed from the teaching-learning situation.

Research concerning the effectiveness of workbooks in the teaching of science and mathematics is too limited to be conclusive. The available evidence indicates that workbooks can be used to increase factual information, but with this use exists the danger of losing much of the interaction between student and teacher. Once again, any complaint that exists is not a result of the workbook, but of its misuse.

Workbook Use in English and Language Arts

No research has been published which examines the effectiveness of workbook use in the teaching of English. In an experiment designed to test the effectiveness of the writing laboratory at Purdue University, Maize (30) used a control group whose primary instruction consisted of drill in an English grammar workbook. Maize reported gains by this group to be significant at the one per cent level. Although this investigation was not designed primarily to test the effects of workbook use in the teaching of grammar, it is the only published research in the area of English instruction that examines the use of workbooks.

While research is almost nonexistent in this area, a number of writers have expressed opinions. Many authors of

books on the teaching of English disregard workbooks altogether, and when they are mentioned, there is little agreement concerning their use. Pooley (39) felt they could be effective for usage practice if carefully chosen, but he warned that most workbooks were unreliable and were losing favor with conscientious teachers. Morsey (34) stated in a very recent book that most students are disgusted by workbook exercises. Hatchett and Hughes (21) expressed the idea that workbooks have little value unless they contain practice material that will meet the exact needs of the individual pupils and are used to overcome some difficulty recognized by the student. Shane (45) stated much the same thing. She wrote that workbooks must be selected on the basis of the specific needs of the individual and that when used any other way, they become an "idiot's delight."

Wilcox (57), on the other hand, recommended that students use workbook exercises without the direct guidance of the teacher if they have already learned the concepts involved.

Opinions expressed in professional journals are equally contradictory. Walcott (54) wrote that the complaints of teachers soon convince one that there are many serious problems arising from the use of workbooks. She also said that for developing skill in the correct use of oral language, the grammar workbook was almost useless. Madden (29) listed as one of the objections raised by many English teachers the observation that students who use workbooks are often weak in

writing complete sentences. He also stated that many teachers feel that workbooks cause weakness in all areas of written expression. Kerr (27) took an entirely different view of the effect of workbooks, stating that a good workbook with short, well-planned exercises can provide needed drill work in a variety of situations. Allen (1), after using what she considered to be a particularly good workbook in high school English classes that she taught, wrote:

> I cannot praise this workbook too highly. . . Its superiority lay in the fact that it had been designed on the apparently little-known principle that high school pupils can learn only one thing at a time, and that it takes intensive and varied drill to teach that.

While no research has been published dealing with the effect of workbooks in English instruction, several recent investigations have examined use of the programmed text in teaching grammar and usage. Kliger (28) pointed out that the same adverse criticisms have been made of the workbook and the programmed text. Although he strongly objected to equating workbooks and programmed instruction, it is undeniable that the two are alike in many ways. With this in mind, recent studies involving English 2600 and English 3200 are of interest. While results dealing with the effectiveness of programmed instruction certainly cannot be applied to workbooks, such studies come closer to giving information concerning English workbooks than anything now available.

In 1962 Reed and Haymon (41) found that students of high

ability learned considerably more using English 2600 than did similar students who used conventional materials. Low-ability students learned less with programed instruction than students without it. Results for average students did not differ significantly. Three years later Kahler (26) reported no important differences for high-ability students, but significant differences in favor of the students using programed instruction who were of average and below average ability.

Unruh (50) found in 1963 that students who used programed instruction learned significantly more grammar than students who studied the textbook.

The following year Bennett (3) investigated the effect on grammar and the improvement of writing skills. He reported that the students who used English 3200 did significantly better in grammar than a similar group who received the regular instruction. However, there no meaningful difference in the two groups in improvement of writing.

Munday (36) performed a similar experiment in 1965, but he measured only achievement in grammar. He found no statistical difference in achievement between the group who used English 3200 and the group that did not.

Although results in the use of programed instruction in grammar have not been the same in all experiments, the evidence indicates that under certain conditions programed instruction is more effective than more conventional forms. These results cannot be claimed as evidence for the

effectiveness of workbooks; workbooks and programed texts are not the same. These experiments are of interest because of similarities that exist between the workbook and the program.

Authorities in the field of English teaching disagree as to the desirability of using workbooks. Practically no research has been published in this area. The research that comes closest to dealing with workbooks is that pertaining to programed instruction in English.

Summary

A survey of educational literature clearly shows that during the past thirty years workbooks have been used extensively in the teaching of reading, social studies, science, mathematics, and English. Greatest acceptance of the workbook has come in the field of reading, but even here many critics have objected to its use. Opinion concerning workbook use in other subjects has been about equally divided for and against among specialists in each subject area. The criticism most often stated was the fear that many teachers were spending so much time using workbooks that other necessary instructional methods were being neglected.

Opinions of teachers and students have favored use of the workbook in all surveys that have been published; however, most of these surveys were made several years ago, and few of the surveys involved large numbers of subjects.

Except in the area of reading, experimental research studies examining the effects of workbook use have been few in number and limited in scope. The studies that are available indicate that students who use workbooks almost always perform as well as students receiving other forms of instruction, and often the workbook students do better. The one major exception to this is found in studies investigating the effects of workbook use in the beginning reading program. Evidence from these investigations indicates that workbooks should not be used in initiating a reading program.

While the largest amount of research of workbook use has been done in reading, the smallest amount has been in English. No published research study has been designed with the primary objective of examining the effects of workbook use in English instruction. A number of experiments have examined use of the programed text in teaching grammar and usage, and these studies show that programed instruction is generally effective in this area.

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CHAPTER III

METHODS AND PROCEDURES

Subjects

The subjects in this study were 160 eighth-grade students in four junior high schools of a large metropolitan school system in North-central Texas. The four schools were similar in size and were located in similar sections of the city. Most of the students were from homes of lower middle class socio-economic status. Only students who completed the entire experiment were used in the study.

Eighty students were in the control group, and eighty students were in the experimental group. There were originally 110 students in the experimental classes. Thirty of these were excluded from the study for the following reasons: eight students withdrew from school; nine failed to take the pre-tests; six failed to take the post-tests; one failed to write the compositions; six had no available I. Q. scores. The control classes initially contained 119 students. Twenty-seven of these were excluded because they failed to complete all the measures used in the study: five students withdrew from school; nine failed to take the pre-tests; five failed to take the post-tests; two did not write

the compositions; and six students had no I. Q. scores. From the remaining ninety-two students, eighty were matched as closely as possible with the eighty students in the experimental group on the basis of mental ability, sex, and previous grades in English. These eighty students were used as the control group in the statistical treatment of the data.

The experimental group contained thirty-eight boys and forty-two girls. The control group contained thirty-nine boys and forty-one girls. Intelligence test scores were obtained from school records. These scores came from the Science Research Associates Tests of Educational Ability, which had been administered in the seventh grade. Mean intelligence for the control group was 103.4 and for the experimental group 103.9. English grades for the previous year were obtained from school records and changed to numerical values. Using a scale of one to five for letter grades "F" through "A," the experimental group had a mean score of 3.34, and the control group had a mean score of 3.03. Table I shows the characteristics of the two groups at the beginning of the experiment.

TABLE I

STUDENT PERFORMANCE ON SRA TESTS OF EDUCATIONAL ABILITY AND PREVIOUS GRADES IN ENGLISH ACCORDING TO GROUPS

	Experimental		Control		t	L.S.
	Mean	S.D.	Mean	S.D.		
SRA Test	103.9	13.7	103.5	12.7	.21	N.S.
English Grades	3.34	1.02	3.03	.99	1.95	N.S.

An examination of Table I shows that there was no significant difference in mean intelligence test scores between the control group and the experimental group at the beginning of the experiment. There was also no significant difference in the previous year's English grades for the two groups, although there was a difference in favor of the experimental group that came close to significance.

The Teachers

Each of the four teachers in the study taught one experimental class and one control class. This was done in order to balance differences in teacher effectiveness. Two teachers taught experimental classes in the morning and control classes in the afternoon. The other two teachers had morning control classes and afternoon experimental classes. All teachers held bachelor's degrees from accredited colleges.

None of the teachers held master's degrees. Teacher A had thirty-six semester hours college credit in English and three years teaching experience. Teacher B also had three years teaching experience, with thirty hours in English. Teacher C had had twenty-seven hours of English and five years teaching experience. Teacher D was the only male teacher. He had taught six years and had thirty-three hours credit in English.

The Experimental Group's Course

The experimental group was taught as nearly as possible like the control group except for differences in drill work in grammar. The experimental group was given drill exercises from the workbook Our Language Today. This workbook was written by Conlin, Herman, and Martin and published by the American Book Company. It was used in the experiment because the school system's English supervisor considered it to be superior to other workbooks that were available. The workbooks were used for two consecutive semesters during the 1967-68 school year. More workbook activities were used during the second semester than the first because many of the topics that required drill work appeared in the course of study during that time. Teachers were instructed not to use the workbooks indiscriminately. The exercises were not to be used as "busywork," but to contribute to the objectives that were aimed for in the course of study that was already being

used. No effort was made to cover the entire workbook, but instead each teacher was instructed to use drill exercises that he felt would be beneficial in achieving his overall objectives for the course.

All work in the workbooks was done by the students during the regular class period. Each workbook assignment was made to the entire class. The workbook was not used for individualized instruction. After the conclusion of the experiment, all workbooks were returned. It was observed that each teacher had used approximately fifty pages of workbook exercises and that most of these had dealt with grammar and usage. There were sections in the workbook dealing with using the library, composition writing, and other things, that were not used.

The Control Group's Course

The classes that made up the control group were taught according to the standard course of study. Each teacher was instructed to teach his class in the same way that he had always taught, as if the classes were not involved in an experiment. The teachers were free to use any type of drill work in their control classes that they were ordinarily accustomed to using. Each teacher kept a record of the activities that were used. These records reveal that almost all drill work done in the control classes during the time that corresponded with the experimental group's use of workbooks

consisted of either copying drill exercises from the state-adopted textbook, Wariner's English Grammar and Composition, or copying teacher-made drill exercises from the chalkboard. These records further show that in both groups the teaching of grammar was only one of many activities engaged in by the teachers. They also taught literature, composition, linguistics, and speech, among other things. From a study of the records of their activities it appears that the teaching of grammar takes up something less than one-fourth of the English teachers' time, with drill work being only a part of that.

Data Collection

The Measures

All tests used in the study were administered by the teachers. Class periods were fifty-five minutes in length, and no instrument used required more than that time for administration. Alternate forms of the following measures were administered to subjects before and after the experimental treatment:

1. The California Language Test.-- This test is a subtest of the California achievement series. It consists of two parts: mechanics of English and spelling. The mechanics of English score measures the student's ability in capitalization, punctuation, and word usage. The second part gives

a separate score in spelling. The entire test is very simple to administer and takes only thirty minutes of actual testing time. The authors reported a reliability coefficient of .92 for mechanics of English and .83 for spelling (5, p. 8). Construct validity has been shown through a correlation with the Metropolitan English Test that yielded a correlation coefficient of .88 (3, p. 13).

Although the authors claim that this test can be used as a diagnostic test, the reviewer in the Mental Measurement Yearbook considered it to be a test of "general level of competence in correct writing" rather than a test used for diagnostic or analytic purposes (1, pp. 148-151). The test was meant to serve primarily as a measure of general achievement, and that is the way it was used in this study.

The reviewer also reported that the test manuals were definitely above average in the amount and value of the information presented (1). Good instruction manuals were of importance in this study because the tests were administered by the teachers.

It was also reported that the testing techniques employed in this test have been used widely (1, p. 151).

2. Test of Attitude Toward Any School Subject.-- This test is one that is included in the Purdue Master Attitude Scales. It is a short, simple attitude scale that is very easy to administer in a short time. The reliability of this scale for various population samples has ranged from .71 to

.92 (2, p. 5). Validity has been demonstrated by correlating the scale with Thurstone's attitude scales. This has resulted in almost perfect correlation (2, p. 2).

Reviewers in The Mental Measurements Yearbook were not enthusiastic concerning the use of generalized attitude scales, but they stated that these scales had value when used in measuring attitudes toward school subjects. Clark wrote that the need for generalized scales is not nearly as apparent today as it once was, but that certain generalized scales such as those for school subjects "still retain their unique usefulness" (1, pp. 91-92). Campbell also reviewed Remmer's attitude scales. He, too, felt that the scales were not useful in some areas, but he condoned their use in measuring attitudes toward school subjects:

> There is, however, one type of problem for which generalized scales are essential; this is the sociological problem of the relative reputational standing of social objects. In the Remmers series, this use is illustrated in the studies of attitudes toward school subjects. . . (1, p. 91)

The Compositions

Each subject in this experiment wrote two short compositions to be used to determine progress in writing. The average length of the compositions was about one-hundred-fifty words. All students wrote on the same topics. The first composition, which was written at the beginning of the experiment and served as a pre-test, was entitled "What I

Like About School." The post-test composition, written at the end of the year, was entitled "My Plans for the Future." It was realized that neither of these titles was particularly stimulating, but it was felt that both were of the same approximate interest to the average junior high school student. The subjects were given the topics and asked to write a one page composition. No discussion was made concerning the topics. Within the limits of the fifty-five minute class period, the students were allowed to take as long a period of time as they felt necessary to complete the compositions to their satisfaction.

Grading the Compositions

The compositions were graded by three experienced junior high school English teachers. Two of the graders had five years teaching experience, all at the junior high school level. The third grader was a retired English teacher who had taught junior high school, high school, and college level English. She had taught sixteen years in junior high school, and her most recent teaching experience had been at this level. Two of the graders held bachelor's degrees, and the third held a master's degree in English.

Each composition was graded by each rater according to a one-hundred point rating scale that was adapted from a scale used by Buxton (3) in a study at Stanford. After an explanation of the scale and a practice session using it,

each grader was asked to score a number of sample compositions. These scores were correlated to determine the reliability of the ratings given by the three graders using the rating scale. The correlation of the scores given by grader one with those of grader two yielded a product moment coefficient of .85. The correlation between grader two and grader three was .83.

Names and dates were removed from all compositions. The raters did not know which compositions were pre-tests and which were post-tests, nor if a paper was written by a member of the experimental group or the control group.

The three graders worked independently. No grades were placed on the compositions; all ratings were made on copies of the rating scale. Each composition was numbered, and the number of the composition being graded was placed on the rating scale for identification. This resulted in three separate ratings for each composition. The final score for each paper was the mean of the three ratings.

Intelligence Test Scores

Although intelligence tests were not administered during this study, intelligence quotients that were available in the counselors' offices were used in equating the experimental and control groups and in determining the ability level subgroups. The intelligence quotients came from the Science Research Associates Tests of Educational Ability, which were

administered during the seventh grade. These tests provide measures of language aptitude, reasoning, and quantitative ability that are combined into one score which is converted to an intelligence quotient (2, p. 771). The test is reported to be "extremely well designed." Correlations between the total score of this test and other commonly used tests of mental ability "are found to be quite high." Predictive validity of the test is very high, and coefficients of reliability exceed .90 (2, p. 773).

Procedures for Treating Data

All computations with data were made at the computer center at North Texas State University.

The *t* test for significance of difference between mean scores was used for testing the hypothesis of no differences between groups in intelligence and previous English grades at the beginning of the experiment. This test was also used for testing hypothesis II.

Hypotheses I, III, IV, and V required using the *t* test for significance of differences between mean score gains for the control group and the experimental group.

After the entire control group had been compared with the entire experimental group, each was divided into three subgroups on the basis of intelligence test scores. Students with scores of 110 or above on the S.R.A. *Tests of Educational Ability* were placed in the high-ability subgroups. Students

with scores of 90 through 109 were placed in the average-ability subgroups. Students with scores below 90 were placed in the low-ability subgroups. All hypotheses were then tested again by comparing low-ability control subjects with low-ability experimental subjects, average-ability control subjects with average-ability experimental subjects, and high-ability control subjects with high-ability experimental subjects.

In all instances the .05 level of confidence was used for rejecting the null hypothesis.

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CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

The primary purpose of this study was to determine the effects of using workbooks in the teaching of eighth grade English grammar by comparing students who used workbooks with students who did not on the basis of certain measurements. After the data from the various measuring devices had been obtained, it was organized and arranged for computation at the North Texas University Computer Center. The results of the statistical computations are presented in this chapter.

Pre-Test Characteristics of the Subgroups

As has been noted in a previous chapter, the experimental and control groups in this study were compared on the basis of intelligence test scores and previous grades in English to determine that there were no significant differences on these two variables at the beginning of the experiment. The results of these comparisons have already been presented in Table I. Similar comparisons were made for the subgroups used in analysis of the data. Intelligence test scores and English grades for the 1966-67 school year were used in comparing the subgroups. The high ability control subgroup was compared with the high ability experimental subgroup, the

average ability subgroups were compared, and the low ability subgroups were compared. In comparing these subgroups, Fisher's *t* technique for small groups was used to test the null hypothesis that there was no significant difference between means. The results of these comparisons are shown in Table II and Table III.

TABLE II

SUMMARY STATISTICS SHOWING STUDENT PERFORMANCE ON THE SRA TEST OF EDUCATIONAL ABILITY ACCORDING TO ABILITY LEVEL SUBGROUPS

Group	Mean	SD	*t*	L S
Control High Ability N = 24	118.00	6.81	.02	N S
Experimental High Ability N = 29	118.03	7.33		
Control Average Ability N = 42	101.69	5.45	-.82	N S
Experimental Average Ability N = 37	100.68	5.34		
Control Low Ability N = 14	84.00	3.00	-.48	N S
Experimental Low Ability N = 14	83.29	4.43		

Table II shows the various subgroups to be very closely matched on the basis of intelligence test scores. At all three ability levels the mean for the experimental subgroups are very close to the means for the control subgroups.

Variability between the respective subgroups is fairly close. On the basis of intelligence test scores, there are no significant differences between experimental subgroups and their respective control subgroups.

TABLE III

SUMMARY STATISTICS OF NUMERICALLY CONVERTED ENGLISH GRADES FOR THE VARIOUS ABILITY LEVEL SUBGROUPS

Group	Mean	SD	t	L S
Control High Ability N = 24	3.38	1.03	1.00	N S
Experimental High Ability N = 29	3.66	.96		
Control Average Ability N = 42	3.05	.92	1.77	N S
Experimental Average Ability N = 37	3.43	.97		
Control Low Ability N = 14	2.36	.72	.25	N S
Experimental Low Ability N = 14	2.43	.73		

The statistics shown in Table III were obtained by converting students' 1966-67 English grades to numerical values, using a scale in which a grade of "A" was changed to 5, "B" to 4, "C" to 3, "D" to 2, and "F" to 1. The results shown in this table indicate the students were not equated as closely on previous English grades as they were on intelligence.

At all ability levels the experimental subgroups were slightly superior to the control subgroups, but none of these differences were statistically significant. The variability at each level between control and experimental subgroups was practically identical.

The First Hypothesis

The first hypothesis stated that students who use workbooks will show a significantly greater mean gain on a standardized English usage test than will students who do not use workbooks. This research hypothesis was restated in the null: there will be no significant difference in mean gains on test scores in mechanics of English between the control group and the experimental group. The null hypothesis was tested by using the pre-test and post-test results of the "Mechanics of English" section of the California Language Test. The data obtained for Hypothesis I by comparing the experimental group with the control group are shown in Table IV.

TABLE IV

MEAN GAIN, STANDARD DEVIATION, FISHER'S t, AND LEVEL OF SIGNIFICANCE FOR TREATMENT GROUPS ON MECHANICS OF ENGLISH TEST

Group	Mean Gain	Standard Deviation	t	L S
Experimental N = 80	3.37	9.44	1.10	N S
Control N = 80	1.85	7.97		

The results in Table IV show that the experimental group made gains higher than the gains made by the control group. Since the experimental group was slightly superior to the control group in performance in English as indicated by previous English grades, this is not surprising. The difference that existed in favor of the experimental group was not statistically large enough to allow rejection of the null hypothesis; therefore, the first research hypothesis was not accepted. The students who used workbooks failed to make gains that were significantly greater than the gains made by students who did not.

Although the difference in mean gains on the "Mechanics of English Test" were not statistically significant, another interesting comparison can be made. Because the California Language Test is a standardized achievement test, grade level norms are available for its interpretation. Using these norms

(1, p. 49) gave some interesting results. The experimental group had a pre-test mean of 75 (rounded off to the nearest whole number score) and a post-test mean of 79. Converted to grade levels, this places the experimental group at the 8.8 grade level at the beginning of the study, and at the 9.4 level at the conclusion, for a gain of .6. Using the same procedure, the control group started at the 8.8 grade level and progressed to 9.1, a gain of only .3. This was based on means of 75 and 77. These results are shown in Table V.

TABLE V

PRE-TEST AND POST-TEST MEANS AND GRADE LEVEL EQUIVALENTS FOR TREATMENT GROUPS ON THE CALIFORNIA LANGUAGE TEST, MECHANICS OF ENGLISH

Group	Means		Grade Level Equivalents	
	Pre-Test	Post-test	Pre-Test	Post-Test
Experimental	75	79	8.8	9.4
Control	75	77	8.8	9.1

When grade level equivalents are considered, the difference between the gains of the experimental group and the control group seems to be considerable. However, the statistical treatment of gains showed that the difference was probably due to chance.

It was noticed that neither group made a full year's gain in English achievement. However, both groups were considerably above grade level at the beginning of the experiment, indicating that they had already mastered many of the concepts presented in the test. This would lower the possibility of their showing gain.

Hypothesis I was also tested using scores of the various ability-level subgroups. The results are shown in Table VI.

TABLE VI

NUMBER IN SUBGROUPS, MEAN GAINS ON MECHANICS OF ENGLISH TEST, STANDARD DEVIATION, FISHER'S t, AND LEVELS OF SIGNIFICANCE, ACCORDING TO ABILITY LEVELS

Ability Level	Experimental			Control			t	L S
	N	M	SD	N	M	SD		
High	29	1.83	4.98	24	1.58	6.15	.15	N S
Average	37	3.70	9.20	42	.95	8.52	1.36	N S
Low	14	5.71	14.58	14	5.00	8.25	.15	N S

Results shown in Table VI reveal that by far the largest difference in gains existed between the average-ability subgroups, but this was not large enough to be statistically significant. Table VI shows that no significant differences existed between the various ability-level subgroups in terms of achievement in English as measured by a standardized test. In other words, high-ability students who used workbooks did

not score significantly higher on a standardized English usage test than did high-ability students who did not use workbooks. The same thing was true for average-ability students and low-ability students.

It is interesting to note that the highest gains in Table VI were shown by the low-ability students, while extremely low gains were made by the high-ability students and one group of average ability. This is indicative of the fact that the student who had already mastered many of the concepts involved did not have a chance to gain as much as the student who had not.

The Second Hypothesis

The second hypothesis stated that students who use workbooks will make significantly higher grades in English than students who do not use workbooks. This hypothesis was restated in the null and tested by converting final grades in English for the 1967-68 school year to numerical values using the same scale that was utilized in comparing previous English grades. The results are shown in Table VII.

TABLE VII

SUMMARY STATISTICS OF NUMERICALLY CONVERTED ENGLISH GRADES FOR TREATMENT GROUPS FOR 1967-68

Group	Mean	S.D.	t	L.S.
Experimental	3.44	1.18	1.11	N S
Control	3.24	1.06		

Table VII shows that the experimental group made grades in English that were slightly higher than those made by the control group. However, this was expected because of previous performance on English grades. While the difference in favor of the experimental group was almost significant in the previous year's English grades, the difference in 1967-68 was considerably less than significant. The hypothesis stating that students who use workbooks will make higher English grades than students who do not cannot be accepted.

Results of testing this hypothesis in terms of the ability-level subgroups are shown in the next table.

TABLE VIII

SUMMARY STATISTICS OF NUMERICALLY CONVERTED ENGLISH GRADES FOR 1967-68, ACCORDING TO ABILITY LEVELS

Ability Level	Experimental			Control			t	L S
	N	Mean	SD	N	Mean	SD		
High	29	3.83	1.18	24	3.71	1.14	.37	N S
Average	37	3.43	1.08	42	3.17	.97	1.14	N S
Low	14	2.64	1.04	14	2.64	.81	.00	N S

Table VIII shows no significant differences between control and experimental subgroups at the various ability levels. The evidence indicates that use of workbooks had little effect on English grades regardless of ability level.

The Third Hypothesis

The third hypothesis was stated as follows: students who use workbooks will show a significantly greater mean gain in attitude toward English than will students who do not use workbooks. The null hypothesis was tested by using results from the two administrations of Remmer's Test of Attitude Toward Any School Subject. The statistics from these results are shown in Table IX.

TABLE IX

MEAN GAIN, STANDARD DEVIATION, FISHER'S t, AND LEVEL OF SIGNIFICANCE FOR TREATMENT GROUPS ON TEST OF ATTITUDE TOWARD ENGLISH

Group	Mean Gain	Standard Deviation	t	L S
Experimental	-.28	2.16	.78	N S
Control	-.52	1.57		

The negative values under the mean gain column in Table IX indicate a loss in attitude scores. As can be seen in the table, both the experimental group and the control group experienced a mean loss in attitude toward English during the school year. The loss in attitude was greater in the group that did not use workbooks, but the difference that existed was not statistically significant. The third hypothesis could not be accepted. The evidence indicated only chance

differences between the control group and the experimental group in changes in attitude.

Results of the attitude test were also examined, using the ability-level subgroups. These results are reported in the following table.

TABLE X

NUMBER IN SUBGROUPS, MEAN GAINS ON ATTITUDE TEST, STANDARD DEVIATIONS, FISHER'S t, AND LEVELS OF SIGNIFICANCE, ACCORDING TO ABILITY LEVELS

Ability Level	Experimental			Control			t	L S
	N	M	SD	N	M	SD		
High	29	-.21	1.62	24	-.05	1.12	-.38	N S
Average	37	-.51	2.44	42	-.65	1.47	.03	N S
Low	14	.14	2.28	14	-.92	2.22	1.21	N S

The only subgroup that did no show a mean loss in attitude toward English was the low-ability subgroup that used workbooks. However, the difference in attitude change in this subgroup was not significantly different from the change in the group that did not use workbooks. On the basis of the evidence, no statistically significant differences in attitude were shown between the experimental subgroups and the control subgroups.

The Fourth Hypothesis

The fourth hypothesis stated that the use of workbooks will have no significant effect on students' performance in English composition. This hypothesis was tested by using scores obtained from compositions written at the beginning and at the conclusion of the experiment. The findings are shown in Table XI.

TABLE XI

MEAN GAINS IN COMPOSITION SCORES, STANDARD DEVIATIONS, FISHER'S *t*, AND LEVEL OF SIGNIFICANCE, FOR TREATMENT GROUPS

Group	Mean Gain	Standard Deviation	*t*	L S
Experimental	2.21	9.30	.36	N S
Control	1.71	8.15		

The experimental group made gains in composition that were slightly superior to those made by the control group. It was apparent from the information in Table XI that the difference in gains did not approach significance; therefore, the fourth research hypothesis was accepted. The evidence indicated that there was no significant difference in gains in composition between the group that used workbooks and the group that did not.

Information obtained from testing the hypothesis for

significant differences at the various ability levels is shown in Table XII.

TABLE XII

NUMBER IN SUBGROUPS, MEAN GAINS IN COMPOSITION SCORES, STANDARD DEVIATIONS, FISHER'S t, AND LEVELS OF SIGNIFICANCE, ACCORDING TO ABILITY LEVELS

Ability Level	Experimental			Control			t	L S
	N	M	SD	N	M	SD		
High	29	1.38	7.77	24	.79	8.49	.26	N S
Average	37	2.35	10.53	42	2.81	8.11	-.22	N S
Low	14	3.57	8.52	14	.00	7.13	1.16	N S

An examination of Table XII shows that each subgroup made gains in composition except the low-ability control subgroup, which remained the same. At both the high and low levels the experimental groups made higher gains than did the control groups; however, these groups together contained about the same number of subjects as the average subgroups. At no level were the differences significant. The largest difference existed between the low-ability subgroups, but it was not significant. At all ability levels, the use of a workbook appears to have little effect on students' performance in composition.

The Fifth Hypothesis

The fifth hypothesis stated that there would be no significant difference in mean gains in spelling scores between the control group and the experimental group. This hypothesis was tested with spelling scores from the two administrations of the California Language Test. The results for the experimental and control groups are shown in Table XIII.

TABLE XIII

MEAN GAINS IN SPELLING SCORES, STANDARD DEVIATIONS, FISHER'S t, AND LEVEL OF SIGNIFICANCE FOR TREATMENT GROUPS

Group	Mean Gain	Standard Deviation	t	L S
Experimental	.94	3.41	-.60	N S
Control	1.30	4.15		

The evidence indicated that there was no significant difference in mean gains in spelling scores between the group that used workbooks and the group that did not. Both groups made small gains in spelling, with the control group doing slightly better than the experimental group, but the difference that existed was not statistically significant. The fifth hypothesis was accepted.

An analysis of the spelling scores according to ability levels is presented in Table XIV.

TABLE XIV

NUMBER IN SUBGROUPS, MEAN GAINS IN SPELLING SCORES, STANDARD DEVIATIONS, FISHER'S t, AND LEVELS OF SIGNIFICANCE, ACCORDING TO ABILITY LEVELS

Ability Level	Experimental			Control			t	L S
	N	M	SD	N	M	SD		
High	29	.28	3.24	24	.08	3.34	.21	N S
Average	37	.92	2.87	42	2.40	4.27	-1.76	N S
Low	14	2.36	4.50	14	.07	4.11	1.35	N S

The results presented in Table XIV indicated that each subgroup made some gain in spelling, although some of the gains were extremely low. The highest gains were made by the average control subgroup and the low experimental subgroup. The smallest gains were made by the high-ability and low-ability control subgroups. It appeared that using a workbook or not using a workbook had little effect on gains in spelling; any differences that occurred seemed to be due to chance. This was substantiated by the fact that none of the differences were statistically significant. It was concluded that there were no significant differences in spelling scores between the experimental subgroups and the control subgroups.

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CHAPTER V

SUMMARY, FINDINGS, AND CONCLUSIONS

Summary

The purpose of this study was to measure the effectiveness of using workbooks in the teaching of eighth-grade English grammar. This was accomplished by comparing scores made on various measuring devices by a group of students who used workbooks with a similar group who did not. Students who used workbooks made up the experimental group, and students who did not made up the control group. The workbook used was Our Language Today, published by the American Book Company. Students who did not use workbooks engaged in other drill activities that the participating teachers were accustomed to using. The two groups of eighth-grade English students were compared on the basis of appropriate measures in mechanics of English, spelling, attitude, composition, and school grades.

The following hypotheses were tested:

1. Students who use workbooks will show a significantly greater mean gain on a standardized English usage test than will students who do not use workbooks.

2. Students who use workbooks will make significantly

higher grades in English than students who do not use workbooks.

3. Students who use workbooks will show a significantly greater mean gain in attitude toward English than will students who do not use workbooks.

4. The use of workbooks will have no significant effect on students' performance in English composition.

5. The use of workbooks will have no significant effect on students' performance on a standardized spelling test.

The study was conducted during the 1967-68 school year in four junior high schools of a large metropolitan school district in North-central Texas. The four schools were similar in size and in the socio-economic status of the student bodies. Subjects in the study were 160 eighth-grade students. Four teachers participated, and each taught one experimental and one control class. Two teachers taught experimental classes in the morning and control classes in the afternoon. The other two taught control classes in the morning and experimental classes in the afternoon.

The two groups were equated on the basis of sex, intelligence, and previous grades in English. Statistical analysis showed that at the beginning of the experiment no significant differences existed between the two groups in intelligence or previous grades in English. The control group contained one more boy and one less girl than did the experimental group.

Data collection was accomplished by pre and post testing, and by taking grades from the schools' permanent records. All hypotheses were tested using Fisher's t to determine significant differences in means. Each hypothesis was also tested in terms of performance by ability-level subgroups. Both the experimental and control groups were divided into subgroups of high, average, and low ability according to results of the SRA Test of Educational Ability. Experimental subgroups were compared with control subgroups at each level, again using Fisher's t to determine significant differences in means for each hypothesis.

When mean gains of the experimental group were compared with mean gains of the control group on measures of effectiveness in mechanics of English, attitude, composition, and spelling, no significant differences were found. The experimental group made higher gains than the control group on all of these measures except spelling, but none of the differences were significant at the .05 level. Similar results were found with respect to school grades in English. Mean grades for the experimental group were higher than mean grades for the control group, but the difference was not significant.

Testing the five hypotheses with the results from the various ability-level subgroups also failed to produce meaningful differences. At all levels experimental subgroups showed greater gains in mechanics of English than did control subgroups. Experimental subgroups were superior to control

subgroups at two of the three ability levels in attitude, spelling, and composition. The experimental subgroups of high and average ability also made higher mean grades in English than did the control subgroups, but the low-ability subgroups were equal. However, in all cases differences proved to be non-significant at the .05 level. From the evidence it was concluded that students of high ability who use workbooks do not differ significantly on various measures of achievement from students of high ability who do not use workbooks; students of average ability who use workbooks do not differ significantly from students of average ability who do not; students of low ability who use workbooks do not differ significantly from students of low ability who do not.

Findings

Statistical treatment of the data collected in this study produced the following findings:

1. There was no significant difference in gains in English usage between the experimental group and the control group. Students using workbooks made slightly higher gains than students without workbooks, but the difference was not significant. Neither group showed a full year's gain on the achievement test norms. The experimental group made an average gain of six months, while the control group made an average gain of three months.

2. There were no significant differences in gains in

English usage between the experimental subgroups and the control subgroups of high, average, and low ability levels. The greatest gains were shown by the subgroups of low ability.

3. There was no significant difference between the two groups in English grades. The experimental group made higher grades than the control group, but the difference was not statistically significant.

4. There were no significant differences in English grades between the experimental and control subgroups at the three ability levels that were tested.

5. Little difference was shown between the two groups in attitude toward English. Students who used workbooks showed less loss in favorable attitudes toward English than non-workbook students, but the difference was not significant. Both groups showed a mean loss in attitude toward English.

6. Differences in attitude toward English between the experimental and control subgroups were not of statistical significance.

7. There was no significant difference between groups in gains in composition. The experimental group made higher gains than did the control group, but the difference that existed was not large enough to be statistically significant.

8. There was also no significant difference in composition gains between the experimental and control subgroups.

Each subgroup showed a mean gain in composition scores, with the exception of the control subgroup of low ability, whose mean score remained the same.

9. No significant difference was found between the two groups in gains shown on a standardized spelling test. Control students made slightly higher gains in spelling, but the difference between the two groups did not prove to be of statistical importance.

10. No significant differences were found in spelling gains between experimental subgroups and respective control subgroups.

In summation, no significant differences were found between the experimental group and the control group of this study on any of the five measures that were employed. The experimental group showed slightly higher performance in all areas tested with the exception of gains in spelling. However, no differences tested in the study were statistically significant at the .05 level. This was also true of differences in performance between the control and experimental subgroups. In each of the five areas tested, the high, average, and low-ability control subgroup did not differ significantly from its respective experimental subgroup.

Conclusions

Within the limits of this study, the following conclusions have been made:

1. Students can be taught English grammar and usage as effectively without workbooks as they can be taught with them. In this study both the group that used workbooks and the group that did not made gains on a standardized English achievement test. While there were no differences of statistical significance in these gains, the workbook group showed twice as much gain in terms of grade level equivalents. Between the time of the pre-test and the post-test, the workbook group showed gains on achievement test norms of six months. The other group showed a gain of only three months. This did not show a clear superiority for the workbook because the statistical analysis indicated that the difference very easily could have occurred by chance. It was concluded that the workbooks were no more effective in teaching mechanics of English than were the other methods used in the study.

2. From the evidence presented in this study, it was concluded that using workbooks does not reduce students' effectiveness in written composition.

3. It was concluded that most eighth-grade students experience a decline in favorable attitudes toward English during the school year.

4. The effects of using a workbook are about the same at all ability levels. Although in most cases the low-ability students made greater gains than the high-ability students, this was true in both control and experimental

groups, indicating that the situation was caused by some factor other than workbooks. At all ability levels on all measures, there was no significant difference between experimental subgroups and control subgroups of the same ability level.

5. Student grades in English remain about the same regardless of whether or not workbooks are used.

6. Use of workbooks has little effect on students' performance in spelling.

Implications and Interpretations

The findings and conclusions of this study led to the following implications and interpretations:

1. On first consideration, it seems unusual that neither the control group nor the experimental group in this study made a full year's gain on the standardized achievement test. Two factors must be considered in understanding this. First, both groups were performing, on the average, eight months above grade level at the beginning of the experiment. Second, the highest gains were made by the low-ability students; conversely, the high-ability students made very small gains. The explanation of such a paradox seems to lie in the realization that on a test of relatively few items, such as the test used in this study, the student who had already mastered most of the concepts involved was in effect penalized in terms of gains in a pre-test post-test situation. The evi-

dence indicated that his was probably what happened. The high performance on the pre-test showed that a number of students had already mastered much of the material on the test. There would obviously be less chance for them to show gain on the same test than there would be for a student who had answered very few items correctly. This explains why the gains for the low-ability students in both groups were much higher than the gains for the high-ability groups. It also explains the relatively low mean gain for each group. If the high-ability groups had shown as much gain as the low-ability students, the mean gain would have exceeded one year.

2. In this study the students who used workbooks showed gains in composition that were superior to the gains made by students who did not use workbooks. The difference in gains was far from significant, and it would be foolish to suggest from the results of this study that workbooks are beneficial in improving composition. Nevertheless, the evidence clearly showed that workbooks do not have a detrimental effect on written composition. This was an important conclusion because many teachers have been convinced that workbooks did have such an effect. It must be conceded that, in terms of language development, one school year is a relatively short time to look for major change. Also, two short compositions certainly furnish less than a thorough examination of a student's total ability in composition. But within

these limitations, it was concluded that workbook use had little effect on composition.

3. Since this study dealt with only one school subject, it was impossible to know if the decline in attitude reflected a negative feeling toward school in general or just toward English. Because the final attitude test was administered during the last two weeks of school, it was very possible that the results reflected a feeling of fatigue rather than a specific dislike for English.

4. It appears that junior high school English students can be taught as effectively with or without workbooks. While the workbook does not appear to be superior to other methods of instruction, there was certainly no evidence in this study to discourage its use. It must be remembered that the procedure of this study was designed to make certain that the participating teachers did not spend most of their instructional time using the workbook. The conclusions of the study were made within this context. There is always the danger that in overusing any one teaching technique a teacher might fail to provide other methods that would be more worthwhile. This could certainly happen with a workbook. But within the limitations of this study, the evidence indicates that careful use of a workbook in the teaching of grammar is as effective as other methods that were used.

Recommendations

Several possibilities for further research are suggested by the limitations and implications of this study.

1. A similar study should be undertaken, using a language test with a wider ability range. The California Language Test did not present enough challenge to the high-ability student.

2. A study of the effect of workbooks should be performed using only students of low ability. The largest gains made by the students using workbooks in this study were made by the low-ability students. While these gains were not significantly different from those of low-ability students not using workbooks, only fourteen low-ability students were used in each group. This number was not large enough for a representative test.

3. More work needs to be done toward developing a standardized instrument for measuring student progress in composition.

4. This study should be replicated at a lower grade level. In this study it appeared that by the eighth grade many students had learned as much grammar as they were going to learn.

5. A study examining the effectiveness of workbooks used selectively as individualized instruction by students in correcting diagnosed weaknesses in grammar and usage

would be beneficial.

6. Research studies should be designed and conducted to examine students' attitudes toward English as a school subject. If most English courses are being taught in such a way as to cause students to dislike the study of their language and literature, changes need to be made.

APPENDIX

Score Sheet

A. Marks awarded	Max.	Student
1. Basic mark	25	25
2. Material		
a. Significance of ideas	10	____
b. Critical thinking	10	____
c. Originality	10	____
3. Organization		
a. Introduction	5	____
b. Logical sequence	5	____
c. Unity and coherence	5	____
d. Transition	5	____
e. Effective conclusion	5	____
4. Sentences		
a. Variety in sentence structure	5	____
b. General fluency	5	____
5. Diction		
a. Exactness and vividness of nouns, adjectives, etc.	5	____
b. Interesting and appropriate comparisons, illustrations, allusions, quotations, figures of speech	5	____
TOTAL		_____

B. Deductions

1. Spelling
2. Punctuation
3. Usage
4. Grammar
5. Sentence
6. Form

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