DOCUMENT RESUME

ED 406 390 TM 026 022

AUTHOR Reichenberger, Marcella
TITLE A Research Study To Determine the Effects of PSAT Verbal Skills Training on Secondary Students.
PUB DATE Mar 96
NOTE 80p.; Master's Research Paper, University of Phoenix.
PUB TYPE Dissertations/Theses - Masters Theses (042) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Attitude Change; Correlation; English; Grades (Scholastic); High Schools; *High School Students; Pretests Posttests; *Skill Development; Standardized Tests; *Student Attitudes; Teaching Methods; Test Results; *Training; *Verbal Ability; Verbal Tests
IDENTIFIERS Phoenix Union High District AZ; *Preliminary Scholastic Aptitude Test

ABSTRACT

The primary focus of this experiment was to determine the effects of verbal skill training for the Preliminary Scholastic Aptitude Test (PSAT) on secondary school students. The other concern was whether there was a correlation between class grades and PSAT scores. Finally, there was a determination as to whether there were any attitude changes about standardized testing after the intervention. The study sample was from two sophomore English classes at Carl Hayden High School in Phoenix (Arizona). There were 24 students in the experimental group and in the control group. The research instrument used for the pretest and posttest was a retired PSAT. The paired t-test resulted in a rejection of the primary null hypothesis, that PSAT verbal skills training would have no effect on students' test scores. Correlations between grades and PSAT scores were moderate to small, but none were significant at the 0.05 level. The last analysis was a paired t-test to see if attitudes changed. Results for both control and experimental groups show a level of significance 0.3558 larger than the 0.05 confidence level, supporting the null hypothesis. This study provides evidence that supports recommending PSAT verbal skills training to English teachers and school administrators. Four appendixes present the research proposal, instruments used in the study, and references. (Contains 7 graphs and 30 references.) (Author/SLD)

A RESEARCH STUDY

TO DETERMINE THE EFFECTS OF

PSAT VERBAL SKILLS TRAINING

ON SECONDARY STUDENTS.

by Marcella Reichenberger

A research study

submitted to Dr. Malcolm Enger

of the University of Phoenix

in partial fulfillment

of the requirements for the degree

of Masters of Arts in Education

March 1996

Abstract

The primary focus of this experiment was to determine the effects of PSAT verbal skills training on secondary students. The other concern in this research study was whether there was a correlation between the class grades and the PSAT scores. Finally, there was a determination as to whether there were any attitude changes about standardized testing after the intervention. The sample for this study was from two sophomore English classes at Carl Hayden High School in Phoenix, Arizona. There were 24 students in the experimental group and in the control group. The research instrument used for the pre and post test was a retired Preliminary Skills Aptitude Test (PSAT). The paired-t resulted in a rejection of the primary null hypothesis (i.e., PSAT verbal skill training will have no effect on students' test scores). Correlations between grades and PSAT scores were moderate to small, but none were significant at the .05 level. The last research instrument used was a paired-t to see if attitudes changed. The results for both the control and the experimental groups had a significant level of .3558 larger than the .05 confidence level, therefore, the null hypothesis is accepted. This study provides evidence that supports PSAT verbal skills training. As a result, recommendations to other English teachers and administration for achievement test skill training will be in order.

Table of Contents

List of Graphs

Chapter 1

Introduction

Ron Grossman of the Chicago Tribune recently explained, that the SAT is pegged to a scale ranging from 200 to 800. The midpoint of 500 was where average students used to rank. However, because students achievement has declined, today's average student scores are in the 400s. What the College Board has done by "recentering" is to recalibrate the thermometer. Perhaps this will bolster students' self esteem, but it will not be helpful in preparing them for the knowledge based economy in which they will eventually have to earn a living (Sielaff, 1995).

Because so much recent nationwide emphasis has been placed on the SAT as a measure of student progress, it is important that educators continue to improve student achievement as measured by standardized tests. Familiarity with the format, content, and purpose of standardized tests, including the California Achievement Test, ASAP, Preliminary Scholastic Aptitude Test, and the Scholastic Aptitude Test, is important. For purposes of this research the test in use will be the Preliminary Scholastic Aptitude Test {PSAT}.

Problem Statement/Purpose

Problem Statement

According to the Reading Department Chair at Carl Hayden High School located in

Phoenix, Arizona's inner city, students' scores on the Test of Achievement Proficiency (TAP) from 9th grade to 12th grade not only didn't increase, but decreased overall. The deviation is that test scores are declining when they should be increasing. Although most of the teachers have been working hard at meeting curriculum objectives and have incorporated writing into their curriculum, few implement methodology relating to achievement tests. Because achievement scores are standardized and used for research, placement, and university acceptance, students' scores are important.

This research project is being conducted to address and evaluate the success of a teaching program to increase verbal skills on the Preliminary Scholastic Aptitude Test.

Research Purpose

This research project is being conducted to determine the effects of teaching strategies on PSAT verbal skills of high school sophomores in their English class. A secondary purpose of this study is to determine if there is a relationship between the course grade {English} and the achievement score. The study will also provide information through an attitudinal survey to see if there will be any attitude changed about standardized tests after the treatment.

Problem Background

Despite their limitations, the public and news media often use standardized test scores as a barometer to measure the effectiveness of individual high schools. Right or wrong, achievement tests seem to be America's measuring stick. More than 1.6 million students annually take the Scholastic Aptitude Test (SAT), and some 2,600 colleges and

universities use the test as part of their admissions process and also award a limited number of scholarships on the basis of such scores (Ornstein, 1993).

Although the Educational Testing Service, which developed the SAT, and the American College Testing Program, which developed the ACT, have long claimed that coaching does little to raise scores, controversy has surfaced around the question of coaching. Not only has ETS abandoned its original opposition to coaching -- now it is advising students to prepare for the tests -- the association of 2,600 colleges and universities that use the SAT in their admissions process are now selling computer software to help students study for the test (Ornstein, 1993). Private coaching organizations, such as Kaplan and Princeton Review prepare students for the SAT. The Princeton Review program is a six-week program that prepares about 15,000 students a year. And the Kaplan program prepares approximately 20,000 students a year for SAT's (Ornstein, 1993).

The effects of test sophistication, or sheer test-taking practice, shows a tendency for the second score to be higher. Significant mean gains have been reported when alternate forms were administered after intervals ranging from one day to three years (Anastasi, 1989). Gains are not just limited to alternate forms. The individual who has had extensive prior experience in taking standardized tests enjoys a certain advantage in test performance over one who is taking his or her first test (Milkman, Bishop, & Ebel, 1965). Part of this advantage stems from having overcome an initial feeling of strangeness, as well as from having developed more self-confidence and better test-taking attitudes.

Practice sessions can also be effective. Such familiarization training reduces the effects of prior differences in test taking experience (Anastasi, 1981). The effects of practice (repeated

administrations of the same form of a test or readministrations of different forms of the same test) and coaching (nonspecified assistance) on various standardized tests have also been investigated (Fueyo, 1977). Droege (1966) found significantly higher increases on alternate forms of the General Aptitude Test Battery after one-, two-, and three-year retest periods for each subsample.

Another study analyzed the effects of classroom instruction in test-taking. Wahlsrom and Boersma (1968) introduced test-taking lessons in the classroom and found significantly higher scores for those children trained on the lessons (on the Verbal Reasoning Test of the Differential Aptitudes Test). They summarized: ". . .test-wiseness principles can be taught in the classroom and lead to improved test performance" (p.419). These test-wiseness principles provide students with a set of strategies for taking the test.

Research Questions

There are several research questions that need to be answered to fulfill the purpose of this study and they are as follows:

a. What is the effect of teaching academic strategies related to the verbal section of the PSAT to the students' post test scores?

b. What is the relationship of the students' English grade {score} to that of the achievement score?

c. Do the students' attitudes change after the PSAT verbal skills training?

Occupational Definitions

The word verbal is specified in the title of this research. The verbal section of

the PSAT consists of three areas: analogies, sentence completion, and critical reading questions. The teaching strategies involving the three above mentioned sections will include specific lessons as conveyed in the Test Skills preparation handbook. The methodology will include a daily test question attempted by the student then analyzed and assessed by the teacher and students.

For the purpose of this study the independent variable will be the use of teaching verbal achievement skills. This is also call the "X" variable. These are lessons directly related to the verbal section of the PSAT.

For the purpose of this study the dependent variable will be the measurement of the students' achievement, or the "Y" variable. This will be measured by the Preliminary Scholastic Aptitude Test. This test is a national test developed by the Educational Testing Service and is both reliable and valid. Mastery is not necessarily the goal, but increased scores are.

Hypotheses

1. HO-1 There will be no effect on student verbal achievement scores after students receive teaching strategies on verbal skills.
2. HA-1 There will be a relationship between the course grade and achievement test score.
3. HA-2 Attitudes and beliefs regarding standardized aptitude tests, change as a result of the verbal skills instruction.

The Scope of the Research

The research will be conducted over a period of 10 weeks from September, 1995 through

November, 1995. The population for this research will consist of two classes of 24 lower level sophomore students at Carl Hayden High School. This is an inner city school in the Phoenix Union High School District, Phoenix, Arizona. One of the classes will represent the control group. It is assumed that these classes are typical of many in the Phoenix Union High School District at this level, and that the findings of this study would be applicable to other schools.

Permission to conduct this study will be through Kino Flores, Principal at Carl Hayden High School. Upon completion of this research, the results will be shared with Mr. Flores, the counseling department and the English department. If a significant increase in test scores occur, these test-taking strategies will be shared during a professional hour to all other teachers so that if they opt to try this the researcher will impart the information.

Limitations

The research study will be limited by the constraints of time, in that the study will take only 10 weeks. This is a little more than half of a full semester of school. Certainly a full semester or even a full year would be a broader scope to study for purposes of measuring results.

Even though the classes are randomly selected , a limitation may be that the "gifted " students are not included in the selection, as there are separate classes for "gifted."

Another limitation in the researcher's class is it may have the mainstreaming of approximately five special education students per class. Because the researcher knows that a perfect randomization would reflect the general population, the experiment will not be reflective of standard randomization.

The researcher will try to avoid the halo or Hawthorne effect of giving special treatment,

by teaching the verbal skills no different than any other unit.

A final limitation of some students who enter late or even drop out may cause possible changes in the population resulting in a limiting factor.

The Methodology of the Research

A pre-test and post-test will be given to two classes. The test that will be used is an old PSAT (Preliminary Scholastic Aptitude Test). This is a standardized test that measures developed verbal and mathematical reasoning. To keep in line with English curriculum only the verbal section of the PSAT will be taught. The test has two verbal sections of about 30 questions each {30 minutes for each section}. The following three elements will be covered in the experimental group:

1. Analogies. Students will be familiar with analogy questions and with some of the relationships commonly expressed in analogies.

2. Sentence completions. Students will be able to choose the word or set of words that, when inserted in the sentence, best fits the meaning of the sentence as a whole. This will involve key words that provide clues to the logic of the sentence.

3. Critical reading questions. The students will be familiar with the types of critical reading questions, their directions, the skills they measure, and basic approaches to reading passages. More time will be spent on this segment of the verbal skills because there is more subject matter to cover, such as strategies for extended reasoning, paired passages, tips for critical reading questions, and vocabulary-in-context and comprehension questions.

The study will consist of one group learning specific strategies to the verbal achievement

test given. For example, the teacher will have the students attempt one question per day during bell time {the first five to seven minutes of class}. Then the teacher will give the correct answer to the question by going over how to achieve the correct response {five to seven minutes}. Of course there will be a control group of similar aptitude that will not receive these test taking strategies. The differences in the scores of the sample groups from the pre-test and post-test will show the results of the verbal skills taught in one group and show if there were higher scores.

Data will also be collected from an attitudinal survey given to the experimental group concerning attitudes of standardized tests. Differences in scores on PSAT pre-tests and post-tests in both groups were collected to answer the research questions. The students' attitudes of the the verbal skills instruction were determined by the use of a Likert-type rating scale.

To further confirm the justification of this study the literature available will be reviewed and reported in chapter two.

Chapter 2 Literature Review

Introduction

Chapter two will present an overview of the topics concerning the effects of training in test-taking skills on achievement and assessment tests. There will also be reports of empirical studies dealing with the research questions in chapter one. The chapter will conclude with an explanation of some of the methodologies used by other research studies and how those may relate to this study.

Theoretical Framework

Children, as well as adults, can be handicapped when taking a standardized test because of an unfamiliarity with the test format or with the requirements of the testing situation. Thorndike (1977) states the problem succinctly: ". . . performance on many types of tests is likely to be in some measure a function of the individual's ability to understand what he is supposed to do on the test" (p. 364).

The need then for "prepping" students for tests seems to loom rather largely over teachers, principals, districts, states and even the nation as we are confronted with the question of accountability. When students take a standardized achievement test that is normative in nature, there is comparison to national norms, state norms, local norms, as well as districts norms within states. The pressure on schools to have students do well has prompted the development of programmed

materials and different teaching strategies that help in students test taking performance.

Because students will take several tests throughout their lifetimes, it is important that they receive assistance in becoming better test takers. This facility will result from the students' understanding of the material, their test sophistication and their ability to use problem-solving skills in any testing situation. It is anticipated that any program in test-taking skills will have the most lasting effect when students receive assistance with regard to problem-solving skills that they can apply in diverse testing situations. In addition, test sophistication will also provide students with an edge that the unsophisticated test taker lacks (Anastasi, 1986).

In reviewing the literature in the area of test preparation activities, Ligon (1983) noted that there are three categories of such preparation: test wiseness, practice tests and coaching. Ligon also makes the point that test preparation activities should not only include the students, but also the teachers and parents. Millman, Bishop, and Ebel (1965) defined "test wiseness: as "a subject's capacity to utilize the characteristics and formats of the test and/or the test taking situation to receive a high score" (p. 707). Their outline of test-wiseness or test-taking principles includes elements independent of the test constructor or of the test purpose such as appropriate time-using strategies, careful attention to directions, careful checking of answers, as well as the use of guessing and deductive reasoning strategies.

According to researcher Vivian Fueyo (1977), training the requisite skills for test-taking is essential for student test preparation. Coaching (nonspecified assistance) and practice (repeated test-taking) have been identified as recommended strategies for test preparation.

Researcher Anne Anastasi (1981) talks about another kind of test preparation in which she refers to as "instruction in broad cognitive skills." This is the development of widely applicable intellectual skills, work habits, and problem-solving strategies. The effect of such interventions should be manifested both in test scores and in criterion performance, such as college courses. It is concerned with the modifiability of intelligence itself. Contrary to the still prevalent popular notion regarding the fixity of the IQ, there is a rapidly growing body of evidence that the behavior domain sampled by tests of academic intelligence or scholastic aptitude is responsive to training. It is interesting to note that despite subsequent misinterpretations of the Binet scales, Binet himself rejected the view that intelligence is unchangeable (Anastasi, 1981).

Anastasi recommends a training program that is designed to develop effective problem-solving behavior, such as careful analysis of problems or questions; consideration of all alternatives, relevant details, and implications in arriving at a solution; deliberate rather than impulsive formulation of choice or solution; and the application of high standards in evaluating one's own performance. These are obviously strategies that should improve one's intellectual functioning not only on tests but also in academic work and in many other

everyday-life activities that depend on school learning (Anastasi 1981).

Test coaching has had a short but controversial history in education. During the 1950's analyses of the effects of practice and coaching on test performance conducted in Great Britain considered tests used to assign children to secondary schools (Anastasi 1981). It was typically found that the degree of improvement depended on ability, educational experience, type of coaching, and the underlying characteristics of the test. Coaching programs for the Scholastic Aptitude Test (SAT) were also being initiated at this time. Early studies (e.g., Dyer, 1953: French, 1955; Pallone, 1961) showed promising results despite pronouncements by the Educational Testing Service (ETS) and College Entrance Examination Board (CEEB) that such coaching was ineffective (Reynolds, Oberman, & Perlman, 1988).

Since these developments, there has been extensive research on the effects of coaching on test performance, especially regarding SAT. One study by Messick & Jungeblut (1981) found average gain scores of 29 and 33 points on verbal (SAT-V) and math (SAT-M), respectively. They also confirmed the significant positive effects of SAT coaching but studies indicated that observed gains were reduced for controlled or randomized designs. They also found that program effects increased with student contact time.

DerSimonian and Laird (1983), in a meta-analysis of published SAT test preparation programs, found that gain scores differed by the type of evaluation model employed. They found average gain scores of approximately 10 points on

SAT-V and SAT-M for matched and randomized design (approximately 15 points for controlled designs).

John Katzman (1995), president of the Princeton Review (a private test preparation company), claims his organization's average SAT score improvement is about 13 points. These numbers were attained from a survey response from a random sample of 697 former students. The average total score change among the Princeton Review students for the March 1994 SAT is 127.0 - 12.9 points at the 95% confidence level, and is based on an average initial score of 1047.4 and an average final score of 1174.4. The overall score improvement among all Princeton Review students, based on the best total score for either the March, 1994 SAT, or a Fall, 1994 SAT is 136.8 - 13.1 points at the 95% confidence level, and is based on an average initial score of 1047.4 and an average final score of 1184.2.

Not all researchers agree with the aforementioned studies. They site problems with the sample population, methodology, and validity of some of these studies. Smyth (1990) said, "Companies' advertising should include a detailed account of what kinds of tests (official or unofficial, first or multiple post-coaching test) and of how many and what percentage of their students are represented. Half-truths and citations of unscientific findings are disgraceful in any advertising, but they are unconscionable in a field which purports to serve students" (p.16).

Alderman & Powers (1980) believe that programs designed to improve student performance on the SAT-Verbal section has little impact.

One though must keep in mind that Alderman & Powers work for the

Educational Testing Service, Fredrick Smyth's research was supported by a grant from the College Admission Counselors, and John Katzman is co-owner of the Princeton Review. Bias might have played a role in their studies.

Overall, most of the studies the researcher reviewed showed some increase in performance scores after teaching strategies were imparted. Further study of the conditions under which special test preparation may benefit students is important. There would seem to be greater potential for useful and constructive results from investigation of test preparation in schools and their impact on students' aptitude test performance. Two experimental studies concerning the effects of test preparation will now be reviewed.

Review of the Literature

The following empirical studies had the most relevancy to the research questions in this study. These will be discussed as they pertain to the research questions of this study and its methodology. Other studies scores showed more significant results, but these studies more closely fit the researchers study.

Researchers Alderman and Powers (1980), studied the effects of special preparation on SAT-Verbal scores. Although Alderman and Powers never clearly stated a hypotheses, it was stated that, "The purpose of this study was to determine whether programs of special preparation already in place at secondary schools affect student performance on the SAT-Verbal (SAT-)]." Aside from any observed effects on total SAT-V scores, practice with the test or familiarity with

its item formats could influence student performance on subscores defined by particular item types (e.g., vocabulary drill sessions for antonyms; extensive reading exercises for reading comprehension, or discrete "learning" packages for each item type) (p. 240). Therefore, this study explored the effects of special preparation on the four principal item formats included in the 1980 SAT-V test: analogies, antonyms, reading comprehension, and sentence completion.

A survey of secondary schools in seven Northeastern states, conducted at the start of 1977-78 academic year, established that a significant proportion of schools offers programs of special preparation specifically designed to improve student performance on the SAT-V. Nearly one-third of the schools had programs of special preparation.

The program descriptions obtained through the survey served as the basis for selecting participants for the Alderman, Powers study. The criteria for selecting schools were: [a] a program of special preparation offered in the spring when the study would take place; [b] a program open to junior students in order to avoid any possible interference with college applications; [c] special preparation sessions lasting five hours or longer since shorter programs could be expected to result in less impact; [d] an enrollment of at least 40 students in the program in anticipation of forming two comparison groups within each school; [e] a stated belief in the effectiveness of the effectiveness of the program in improving SAT-V scores; [f] agreement to other conditions necessary for the study, particularly the random assignment of students to treatment and control groups.

Eight schools succeeded in obtaining administrative approval for participation and succeeded in implementing the design of the study. Each public school had a program of special preparation offered as an extracurricular, one elective, and one compulsory program. Most schools followed a commercial review book in their classes; one public school distributed teacher-made materials intended for use in tutoring individual students in a self-paced manner. The programs differed in the extent of their emphasis on particular item formats but all held improving Sat-V scores as a common goal.

Each school listed the students interested in special preparation for the SAT-V and then randomly assigned each student to either the treatment or the control group. The general approach taken in implementing random assignment within the constraints of a field setting was to delay special preparation for students in the control groups until after completion of the study.

Ninety-five percent of the 702 students in the comparison groups were high school juniors. Most (626) had taken the Preliminary Scholastic Aptitude Test (PSAT) earlier in the year. The substantial spread among schools on their mean PSAT-V scores indicated the range of ability in the participating schools. Fifty-seven percent of the students in the total sample were male, primarily because two private schools and one public school had a majority of male students enrolled for their special preparation. Two-thirds of the students had a parent with a college degree, and almost half of these degrees were at the graduate or professional level. Less than ten percent of the students came from an ethnic or racial minority. This

profile fit students in both the treatment and control groups (Alderman & Powers, 1980).

The dependent variable [y] was a special administration of the SAT-V. The particular SAT-V was a form of the test that had been retired from regular use, but whose content paralleled current SAT-V specifications. Procedures for administering and scoring the test remained the same as those for regular administrations.

The independent variable [x] was scores on aptitude and achievement pretests, and student background information. Since the data collection took place in the second half of the 1977-78 academic year and programs given in this time period usually concentrated on special preparation for juniors, scores on an aptitude pretest were taken from the PSAT administration of October 1977. The Test of Standard Written English (TSWE), a test lasting 30 minutes and containing 50 multiple-choice questions, served as the achievement pretest. The eight schools in the study administered the TSWE as a pretest to both groups just before the programs of special preparation for the SAT-V began. Prior to the SAT-V post-test, students also completed a brief questionnaire about their background (e.g., overall grade average, grade average in English courses, parents' level of education, sex, grade in school).

Omitting 63 students who didn't take the PSAT and 80 students without posttest left a total of 559 students in the treatment and control groups. Of the 559 participating overall averages on their pretests supports the equivalence of the

treatment and control groups prior to the start of special preparation. The eight treatment groups within schools had an overall average score of 43.86 on the PSAT-V and 45.35 on the TSWE, while the eight control groups had an average score of 43.76 on the PSAT-V and 45.40 on the TSWE. What differences exist in the posttest performance of the two comparison groups within a school reflect both the direction of their initial group differences in verbal aptitude and English achievement and the impact of special preparation. On the SAT-V posttest the school averages for the two comparison conditions 455.90 for the treatment groups and 445.37 for the control groups, would seem to indicate an overall treatment effect of 10 points on the SAT-V scale of 200-800 points.

Alderman and Powers found significant effects for particular item formats. On both analogies and antonyms, special preparation improved student performance by about one-half item. The estimated effect for analogies was four-tenths of an item and had a significant statistical test associated with it, [$t(482)=1.99, p<.05$]. Similarly, the estimated effect for antonyms was four-tenths of an item and had a significant statistical test, $t(482)=2.07, p<.05$. Although the effect of special preparation on the item format for sentence completion varied inversely with students' prior verbal aptitude i.e., students with a very low PSAT-V score derived a slight benefit from the treatment while those students near or above the mean PSAT-V score gained no advantage on the item format, the estimated treatment effects for reading comprehension and sentence completion were low and not significant.

Empirical Bayes estimates and regression estimates derived from analyses across schools both resulted in an increase in of approximately 8 points. Alderman and Powers concluded, "It would be inappropriate to draw inferences about the impact of other special preparation or about other student populations. Moreover, a regular administration of the SAT may offer student a stronger incentive for maximum test effort.

Another empirical study done by James D. Wiggins proved more significantly. This study was from a total of 50 seniors, who had taken the previous year's December administration of the SAT. And another 50 seniors who had taken only the PSAT in their junior year. Both groups made their scores available. These two groups were labeled "retakers" and "first timers" in regard to taking the SAT. The students all agreed to take a Spring administration of the SAT on the same date at their respective test centers.

The 50 first timers then participated in a 6-hour Saturday program; the program was repeated the next Saturday for the retakers group. The program was based on Donner's (1981) book, *How to Beat the SAT.* He described how to apply game strategy to test taking, treating it as a game with a clear and definable strategy. It was made clear that knowing game rules would not serve as a substitute for knowing the answers. There is no substitute for certainty. Rules are most useful when they are part of an overall "game plan" and should be applied only when uncertain about the correct answers.

Wiggins' results showed that retakers, female students gained a mean of 78

points on the Verbal and 92 points on the Math sections of the SAT. Their overall mean score increased from 977 to 1148, a gain of 170 points. Male retakers had a mean score of 840 the first time and 1112 on the second administration of the SAT, a gain of 172 points. Their mean gain was 98 points on the Verbal and 74 points on the Math sections of the SAT.

The PSAT and SAT scores for the first timers were also contrasted. Female students had a mean Verbal PSAT of 51 and an SAT mean Score of 575. For Math, the scores were 46 and 553. Male students had Verbal mean scores of 45 on the PSAT and 545 on the SAT. Their Math mean scores were 47 and 564.

Results from first to second testings were statistically significant beyond the .001 level for all groups (psat scores were transformed, for example from 45 to 450, for comparisons).

Summary

Chapter two provided a review of the literature as it relates to this study. The literature dealt with questions designed for this study, and showed diverse results.

Some of the literature supports the use of teaching strategies related to the verbal section of the PSAT. The skills learned may also be generalized to tests other than the SAT or PSAT and thus be of long-lasting benefit to the participants. Despite differences over methodology, testing instruments, or populations, the empirical and anecdotal evidence supports test preparation. A training program of

at least five weeks seems to derive maximum benefit (Samson, 1985; Hymel, Guedry-Hymel, 1987).

The literature revealed methodologies that produced reliable and valid results. Chapter three will look at the methodologies used in this study.

Chapter 3 Methodology

Introduction

For many high school students, SAT may just be a capitalized action verb. Many have difficulty taking standardized tests. Despite the test's difficulty, it may be even more difficult, if not impossible, to find a human characteristic that cannot be modified by teaching, or experience. How important then it is to make understandable to the learner what the criterion and behavior are that will be tested. Test preparation and familiarization is a positive approach to taking a test.

The researcher will study the effects of teaching strategies for verbal aptitude by using the Preliminary Scholastic Aptitude Test (PSAT-V) as the dependent variable or the measurement. The PSAT is both reliable and valid according to the College Board Validity Study Service (Crouse & Trusheim, 1989). The researcher will also be looking for the possibility of a relationship between the students attitudes about standardized testing, future college attendance, and their tests scores. The attitude survey was field tested by 24 University of Phoenix graduate students for its validity.

This chapter will introduce the methodology used in this study. It will describe the aptitude test, survey, intervention (verbal skill training), and population used in this research study.

Research Strategy

Both the experimental and control groups will be given an attitude survey (Appendix B) before and after the intervention to see if there will be any changes in attitudes after the intervention. The researcher will also be looking for the possibility of relationships between gender and test scores and students who want to go to college and test attitudes. The experimental group will receive training on the Preliminary Scholastic Aptitude Test on the Verbal section (PSAT-V). Daily test questions will be attempted then examined during bell time (the first 5-10 minutes of class). The control group will do daily journals during this time. A pre and a post PSAT test will be given to the experimental and control group to measure verbal aptitude. Following the 10-week intervention (two weeks set aside for testing), the attitude survey will be given to the experimental and control groups again to see if any attitudes have changed.

The experimental group will attempt daily a PSAT test question. Then the class will discuss their answers and why they chose the particular answer. The teacher will later give the correct answer and the reason for it. This material will come from the *Test Skills* (College Board, 1992) test preparation book. Grades will be given at the end of two weeks to see if they have kept daily logs noting

their answer and an explanation, then the correct answer and an explanation. The daily log will not be graded for right or wrong answers.

Vocabulary words from retired SAT tests will be used instead of the typical curriculum vocabulary words. These words and lessons on memorization techniques, such as mnemonics, root meanings, and flash cards will be implemented into Monday's vocabulary unit The control group will use regular curriculum vocabulary words. The SAT vocabulary material will come from the handbook *Cracking the New SAT & PSAT* (Robinson & Katzman, 1994).

One day a week (Tuesday), will be utilized for content review. Skills such as diverse relationships among analogies, context clues for sentence completion, and critical reading comprehension will be taught. The control group will have lessons in grammar.

Daily test questions including analogies, sentence completion, and reading comprehention may be found in the *Test Skills* workbook (College Board, 1992). The research design will be as follows:

Week of 9/4

Administer student surveys and PSAT

Week of 9/11

Monday: Introduce five new SAT vocabulary words. Students will then write the

definition of the word and use it in a sentence.

Tuesday: Introduce students to analogy questions and directions

Give daily analogy test questions for students to attempt to answer for example:
SQUABBLE:FIGHT::
A) enlightenment:novel B) gimmer:blaze C) drink:cafeteria D) ship:port E) quiet: sound
Written in sentence form, the relationship between SQUABBLE and FIGHT can be described as follows:

:A SQUABBLE is a small or not very serious FIGHT."

Now look at the answer options to see if they fit the same relationship. Is enlightenment a small novel? No, so A) is incorrect. Is a glimmer a small or not very serious blaze? Yes. Option B) fits the relationship so it is possibly correct. Drink is certainly not a small cafeteria and ship is not a small port, so options C) and D) are incorrect. Quiet is the absence of sound but it could also be considered a small amount of sound, so E) is also possibly correct.

At this point you have to guess between B) and E). You have a one out of two chance of being right, so choose one of them. You should guess even if you can eliminate on choice as not possible. Actually, the correct answer is B) glimmer: blaze since it best expresses a relationship similar to the one between SQUABBLE and FIGHT.

Week of 9/18

Monday: Introduce five SAT vocabulary words that need to be defined and used in sentences

Tuesday: In How to Take Tests, Millman and Pauk (1969) listed several relationships commonly found in verbal analogies tests. These will be listed for the students to write out.

Relationship	Example
same (opposite of)	wrath:anger
type of or adjective	Merino:sheep
part of	spring:watch
becomes or comes before	tadpole:frog
is a cause (effect) of	puncture:blow-out

goes with	bacon:eggs
is used to (done by)	mop:clean
is used by (uses)	Hammer:carpenter
is made from or made of	clothing:fabric
is larger (smaller) version	lake:pond
is more (less) than	hard:formidable
is a measure of	mile:distance
has the purpose of	perspiration:cooling
is located in (by or around)	Chicago:Illinois

Daily analogy questions (see 9/11)

Week of 9/25
Monday: Five more vocabulary words

Five more analogy questions

Week of 10/2
Monday: Five new SAT vocabulary words

Tuesday: Students will be familiar with sentence completion questions, their directions, the skills they measure, basic approaches to dealing with sentence completion questions, and the application of guessing strategies in the testing situation.

Daily sentence completion questions will be attempted and kept on their PSAT log.

An example of a daily sentence completion question:

Ravens appear to behave___, actively helping one another to find food.

A) mysteriously B) warily C) aggressively D) cooperatively E) defensively

The correct answer to this question is D). The key phrase "helping one another" defines the word cooperatively.

Week of 10/9

Monday: Five more vocabulary words

Tuesday: Lesson on strategies for sentence completion questions, for example key words clues or signals to the logic of a sentence like the following:
-words that connect ideas that are similar: and, also, besides, for example, in other words, likewise, another, in addition, moreover, furthermore.
-words connect ideas that are in opposition or contrast: but, nor, not, instead, however, in contrast, on the other hand, except, regardless.
-words that connect ideas in cause and effect relationships: because, consequently, therefore, thus, hence, as a result, in order to.
-words that mean a certain condition should be considered: if, when.

Five more questions on sentence completion (see above example)

Week of 10/16
Five Critical Reading Questions

Students will be familiar with the types of critical reading questions, their directions, the skills they measure, and basic approaches to reading passages (pg. 65)
Monday: Five new vocabulary words

Tuesday: Types of Critical Reading Questions:
Vocabulary-in Context Questions
*The student will determine the meaning of a word from its context in the reading passage. Comprehension Questions
*The student will understand information presented in the passage.
Extended Reasoning Questions
*The student will read actively, to synthesize and analyze information as well as to evaluate the assumptions made and the techniques used by the author. The students should be able to recognize what points would strengthen or weaken what the author's saying or suggesting.

Week of 10/23
Five vocabulary-in context and comprehension questions

Monday: Five new vocabulary questions

Tuesday: Lesson on key words and phrases frequently used in reading passage questions. Students will learn to look for them and understand their meaning. For example best means most suitable, chiefly mean above the rest, and except means something that does not belong with the other choices.

Week of 10/30
Five extended reasoning questions

Five new vocabulary words

Tuesday: Students will have an understanding of the meanings of facts, assumptions and inferences. The definitions will be added to the vocabulary list.

Week of 11/1
Post testing of the attitude survey and PSAT-V

Population and Sample

The experiment will take place at Carl Hayden High School, which is part of the Phoenix Union High School District located in Phoenix, Arizona. The school is considered "inner city" and the majority of the students come from a lower socio-economic background. There are about 2,300 students attending Carl Hayden High School and about 80% of these students are Hispanic. The sample will consist of about 60 students. 30 will be the control group and the other 30 will be the experimental group. The sample students will come from two of the researcher's sophomore level English class.

Measurement of Variables

When justifying test preparation in the researcher's sophomore English class, one area considered is the standardized test scores of these students. The main question to be answered in this study is what is the effect of teaching academic strategies related to the verbal section of the PSAT will be to the students post test scores of the same test. The main hypotheses being tested, stated in the null, is that "There will be no effect on student verbal aptitude scores after students receive teaching strategies on verbal skills." This study will measure the relationship between the course grade and the PSAT score to see if there is a correlation or just test sophistication. Attitude may have a lot to do with test scores. If a student feels that a standardized test doesn't matter it will effect the level of performance. But if a student learns how to take the test, and what the scores are used for, then new attitudes may effect student performance. This study will then test the hypothesis that "attitudes regarding standardized tests (e.g. PSAT), will change as a result of verbal skills instruction."

The Research Instrument

One of the research instruments to be used is a retired Preliminary

Scholastic Aptitude Test (PSAT). The purpose of this instrument is to compare pretest scores with posttest scores, after a verbal skills intervention takes place in the experimental group. The PSAT is a test that juniors take to not only have the chance for a merit scholarship, but to prepare for the Scholastic Aptitude Test (SAT), generally taken during students' senior year. The PSAT is a shorter version of the SAT.

The other research instrument that will be used is an attitude survey written by the researcher. This survey will be given to both the control and experimental group as a pre and a posttest. The purpose of the survey is to collect data to determine attitudes about standardized tests, college aspirations, and preparedness for the test. The results of this data will be discussed in Chapter five.

The College Board Validity Study Service has tested for reliability and validity for the PSAT. And the attitude survey was field tested for reliability and validity by 24 professional researchers at the University of Phoenix, In July of 1995.

Sampling Methods and Procedures

The sampling method used was a random selection of the students enrolled in English 3-4 at Carl Hayden High School. Each of the classes had approximately 30 students each. A toss of a coin determined which class would become the experimental group to keep their selection impartial.

Analytical Methods

All surveys and PSAT's will be collected and scored by the researcher. This information will be submitted with the proper forms to the Data Analysis Service (DAS) at the University of Phoenix (Appendix C). The researcher will request a frequency distribution and descriptive statistics. The descriptive measures used will be mean, mode, median, standard deviation, and z-score. A Paired T-test will be administered for both the PSAT and the attitude survey to compare the test scores between the experimental and control group. The researcher will be looking for a significance at the .90 level of confidence. The T-test will also determine if there will be a statistically significant difference within each group from September to November. The data will then be interpreted by the researcher to see if the H1 hypotheses is accepted or rejected.

The researcher will also request a coefficient of correlation between students class grades and their PSAT score. If there is a high degree of correlation this will indicate only a covariance. Coefficient of correlation does not prove causality. This test will allow the researcher to accept or reject the H2 hypothesis.

Summary

The main focus of this study is to determine the effects of test preparation on verbal aptitude of secondary students. The secondary purpose is to determine the effects of the attitudes towards standardized testing (before and after the intervention) of secondary students. The sample for this study will be from two sophomore English classes at Carl Hayden High School in Phoenix, Arizona. The measurable data from this study will be collected from the PSAT and an attitude survey. Both the PSAT and the attitude survey will be given to an experimental group and a control group. All information will be analyzed for statistical significance by Data Analysis Service at University of Phoenix. The statistical results will then be discussed in Chapter Four.

Chapter 4 Results and Findings

Introduction

This study was designed for the primary purpose of examining the results of statistical tests run to see if the intervention of teaching verbal SAT skills on sophomore English students at Carl Hayden High School had any effect. Chapter 4 reports the results of the paired-t of test scores on a pre and post tests of control and experiment groups. A t-test for paired samples was also used for the results of the attitude survey to see if the intervention had any effect on attitudes. Some correlations were run to see if there were relationships between the course grades and achievement test scores.

The research took place from the week of September 4, 1995 through November 1, 1995, at Carl Hayden High School in the Phoenix Union High School District in Phoenix, Arizona. The sample consisted of 24 students in the control group, and 24 students in the experiment group who received the intervention.

The experiment was designed to determine the effects of PSAT verbal skills training on students' test scores and its effects on their attitudes about testing. Based on the results, continued training will take place in the future.

Results and Findings

Research Question A: What is the effect of PSAT verbal skills training on the student's achievement test scores?

(H-1) Test scores will improve as a result of the PSAT verbal skills training.

(H0-1) PSAT verbal skills training will have no effect on students' test scores.

To answer this question a t- test for paired samples was used to show the difference in the mean scores of the pre and post tests of the control group and the experimental group. The results show that there was a T value of -2.0416 between the two mean scores of the pre and post test of the experimental group which is significant at the .0469 level. Graph 1 shows these results.

Based on the significance of the paired T-test between the groups at the .05 level, the null hypothesis (HO-1) is rejected and the hypothesis (H-1) is accepted.

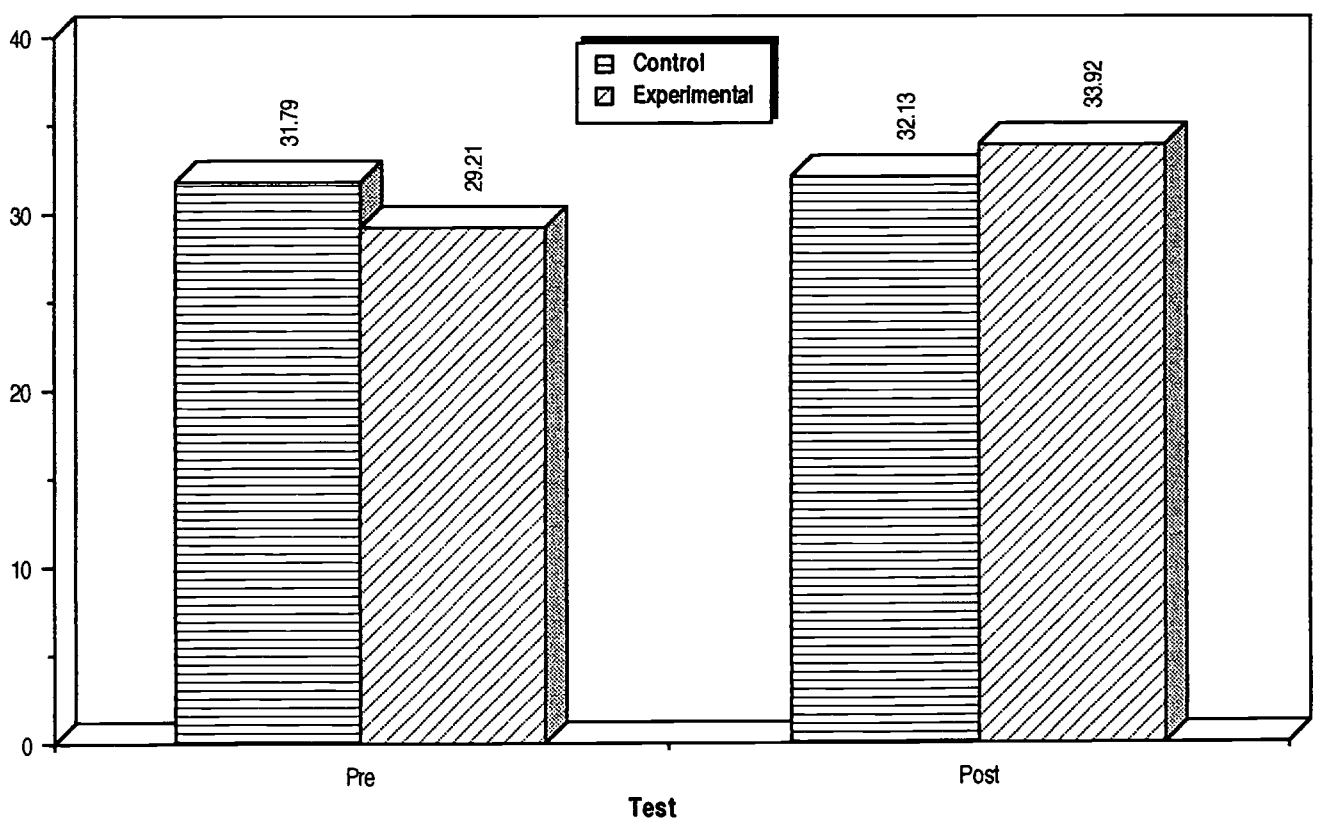
A t-test was also run to test for significance at the .05 level between the control group's pre and post scores. The results show that there was a T value of -.1334 with a significance of .8945. This score is higher than the .05 test level. Therefore, it is not significant. Since this group had no intervention the unchanging score (e.g., pre 19, post 19) has no effect on the hypothesis.

T-tests for paired samples were also run to see if there was a difference between the control and the experimental group. The results for this test were not as valid as the above mentioned t-test because the control and experimental group have unequal grades, and pre test scores. For example, the overall English grade average for the control group was 2.75, whereas

the English grade average for the experimental group was 2.50. Henceforth, the pre test mean for the experimental group was 16, and the pre test score for the control group was 19. On the post scores the experimental group received a 20 mean, while the control groups post scores remained the same as its post score at about 19. The following test will show no significance between the two groups because of only a one point variance.

The results of the t-test between the control and experimental group show a T value of -.7206 and a significance score of .4748 which is not significant at the .05 level.

Graph 1



Research Question B: What is the relationship between the course grade and achievement test score?

(H-2) There will be a relationship between the course grade and achievement test score.

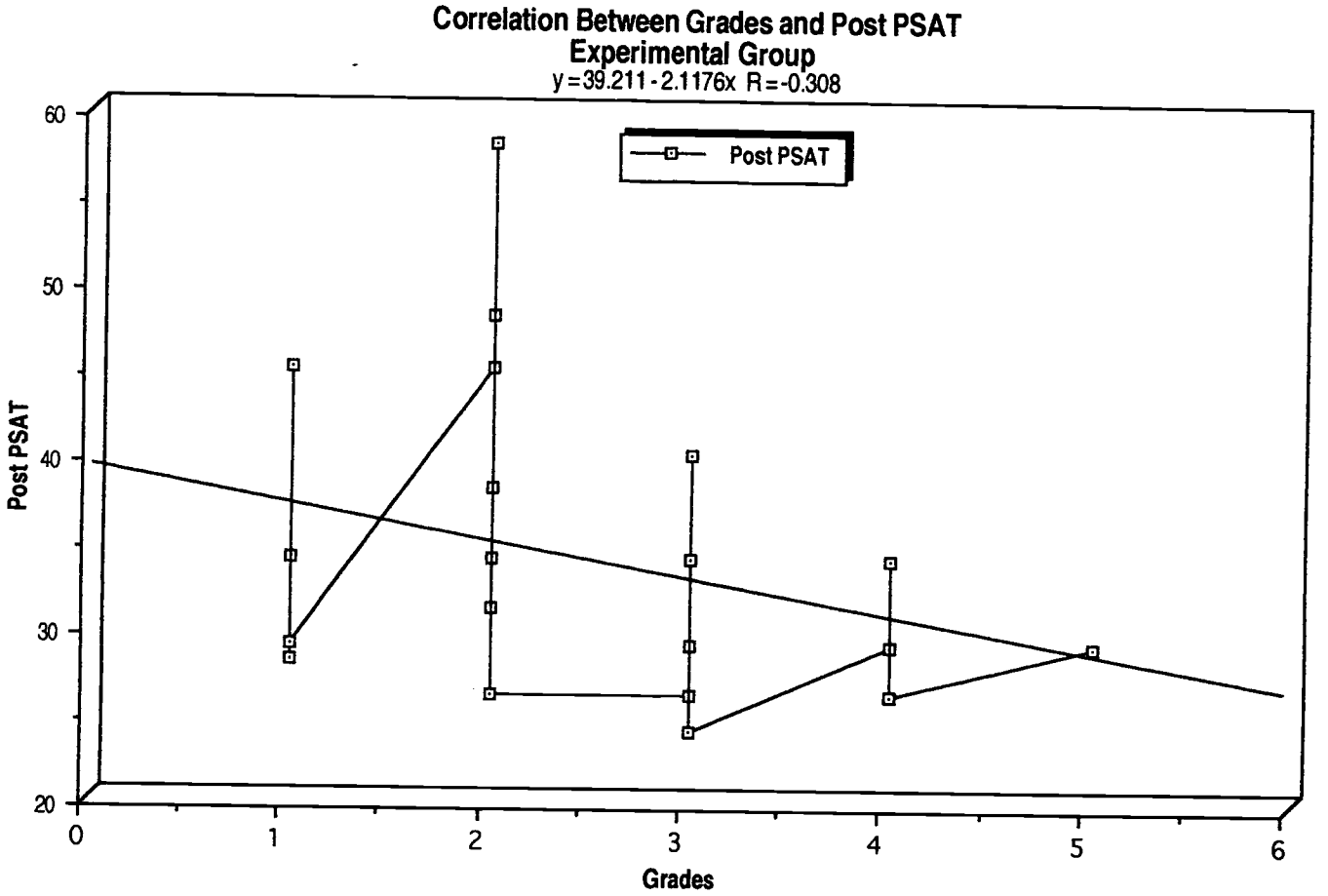
(HO-2) There will be no relationship between the course grade and the achievement test score.

To answer research question B a Pearson's Correlation Coefficient was used to measure the linear association between the experimental and control groups grades to the PSAT post score. The results of the experimental group show that there was an R value of .308 which is larger than the .05 significance level. As a result we accept the null hypothesis (HO-2) and a reject the hypothesis (H-2).

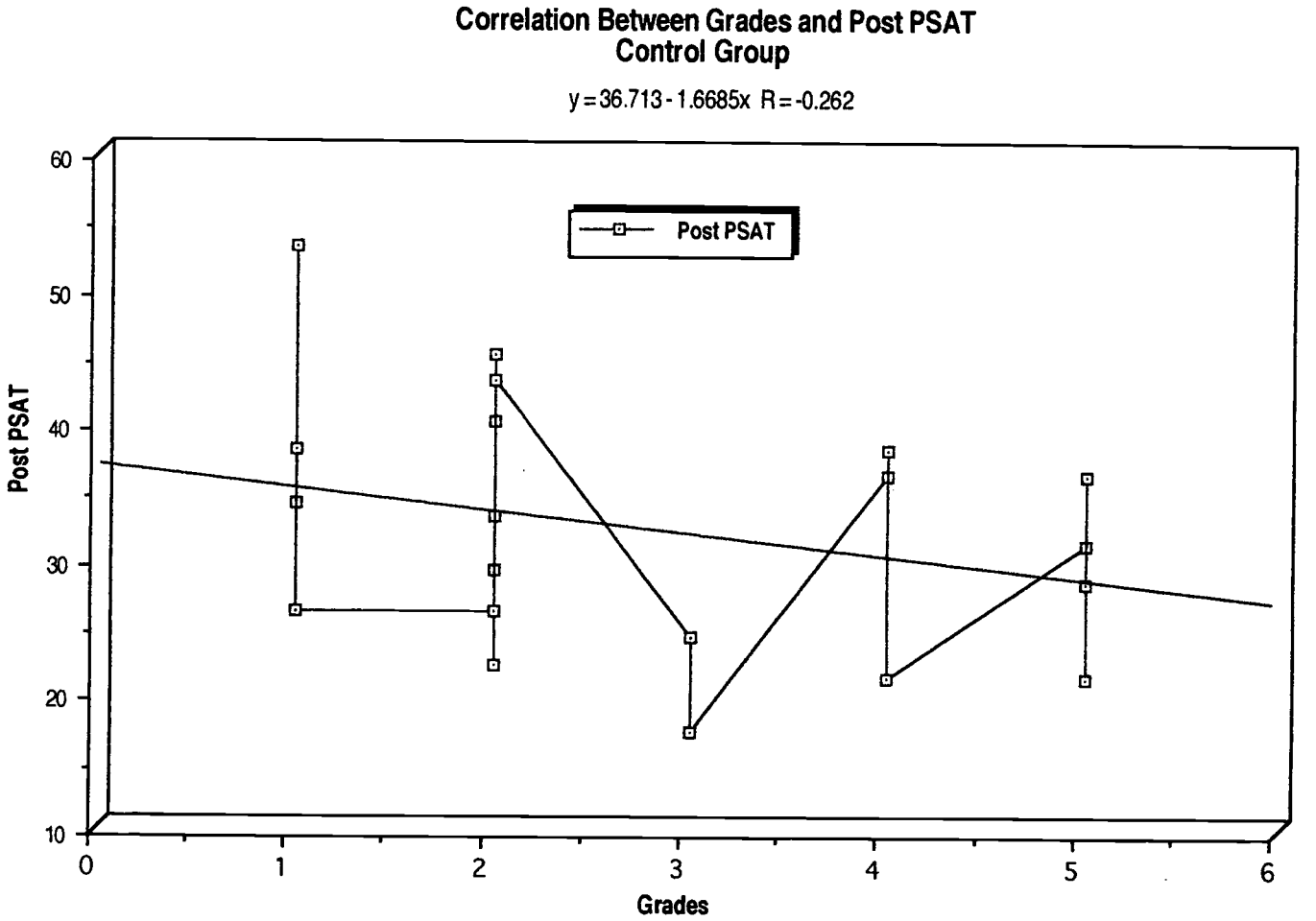
As for the results of the control group the R value is .262 which is also higher than the .05 significance level. Again, we fail to reject the null hypothesis and there is not a significant relationship between the grades and the PSAT scores.

Although there was no significant relationship between grades and PSAT test scores in either group, small and moderate levels were reported. Correlations of various sizes range from large: .50, moderate: .30, to small at .10. This shows that the experimental group at a R-value of .308 has a moderate level of correlation, and the control group with a R-value of .262 has a small correlation. Graphs 2 and 3 on the following pages show these results.

Graph 2


Correlation Between Grades and Post PSAT
Experimental Group
y=39.211-2.1176x R=-0.308
Post PSAT
60
50
40
30
20
Post PSAT
0
1
2
3
4
5
6
Grades

Graph 3


Correlation Between Grades and Post PSAT
Control Group
y = 36.713 - 1.6685x R = -0.262
Post PSAT
Post PSAT
60
50
40
30
20
10
0
1
2
3
4
5
6
Grades

Research Question C: Did attitudes and beliefs regarding standardized testing change as a result of the verbal skills instruction and review of standardized tests?

(H-2) There will be a change in attitudes and beliefs concerning standardized testing after the intervention.

(HO-2) The PSAT verbal skills training will have no effect on the attitudes of students.

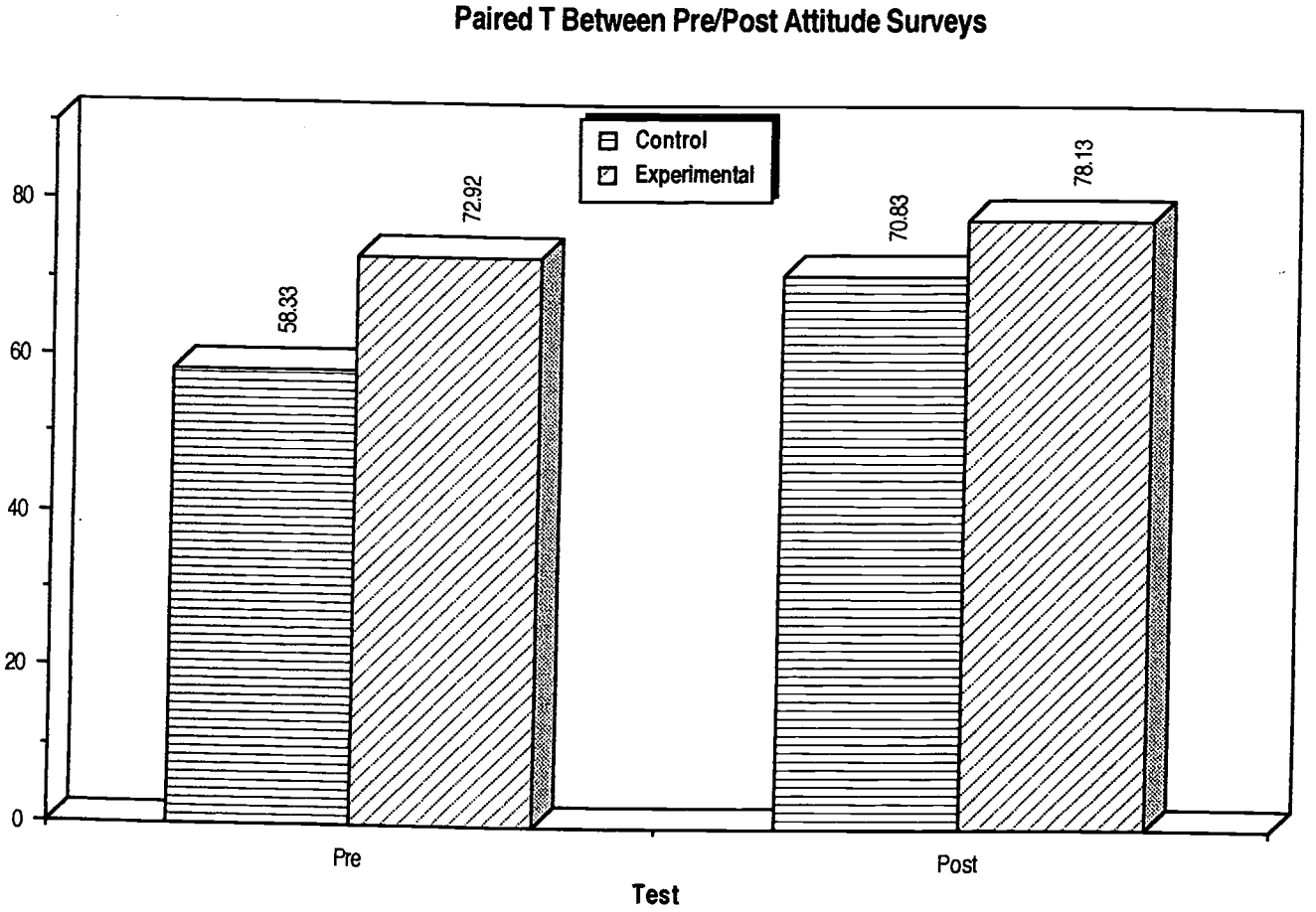
To answer this question, the pre and post Reichenberger Attitude Survey was given to the control and experimental groups and a pared t-test was used for the first 4 questions. The results are as follows:

Paired Items	T Value	Significance
Control pre/post	-1.5337	.1319
Exp. pre/post	-.6514	.5180
Control/exp. post	-.9329	.3558

All of the levels of significance results are larger than the .05 test level. Therefore, the null hypothesis (HO-2) is accepted and the hypothesis (H-2) is rejected. The Paired T results may be seen on Graph 4.

A final question on the Reichenberger Attitude Survey (ques. 5) was asked to see if students believe whether standardized tests are a good measurement of knowledge or not. Although no statistical test was run for this question, 71% of the experimental group before and after the intervention felt standardized tests is a good measurement of knowledge. Whereas 58% on the pre question of the control group felt that standardized tests are a good measurement of knowledge, yet the rate was 50% when the control group was asked the same question on the post survey. Pie charts can be viewed on charts 5,6, 7, and 8.

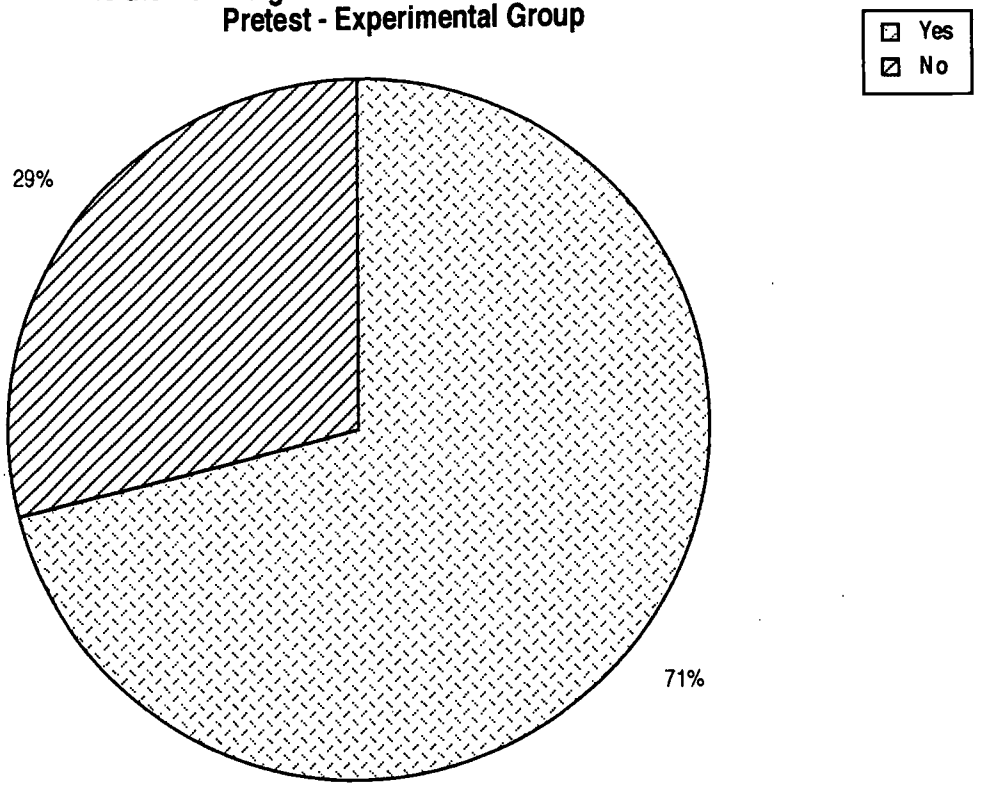
Graph 4


Paired T Between Pre/Post Attitude Surveys
Control
Experimental
80
60
40
20
0
58.33
72.92
70.83
78.13
Pre
Post
Test

Graph 5

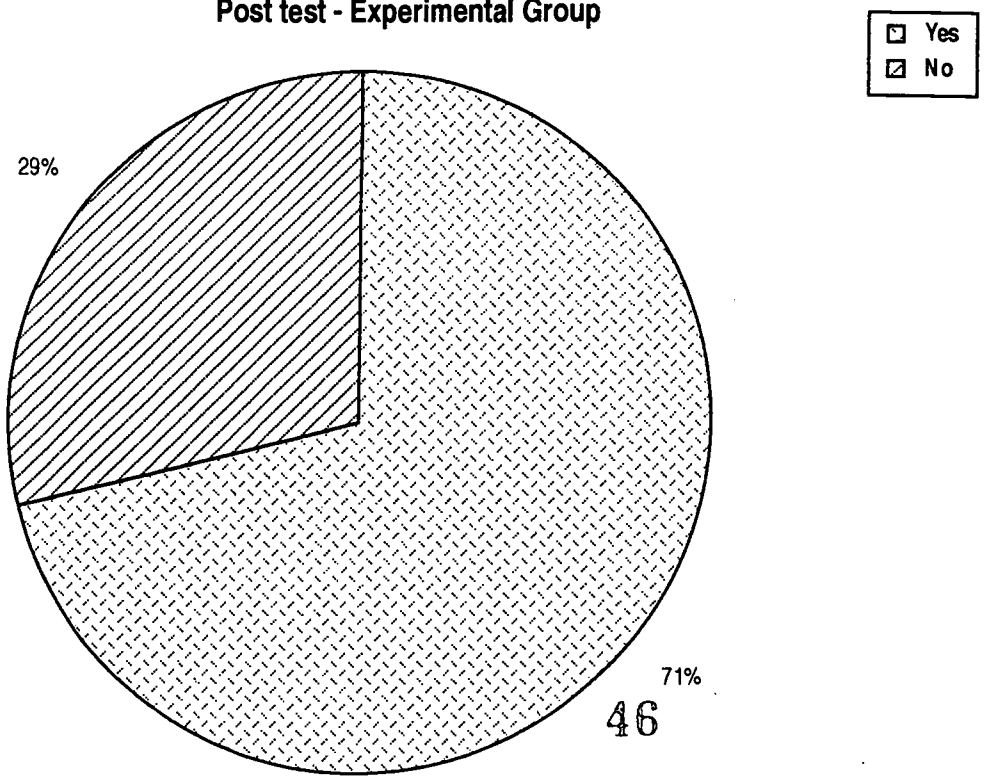
Attitude Survey Question 5

Is the PSAT a good measurement of knowledge?
Pretest - Experimental Group



Attitude Survey Question 5

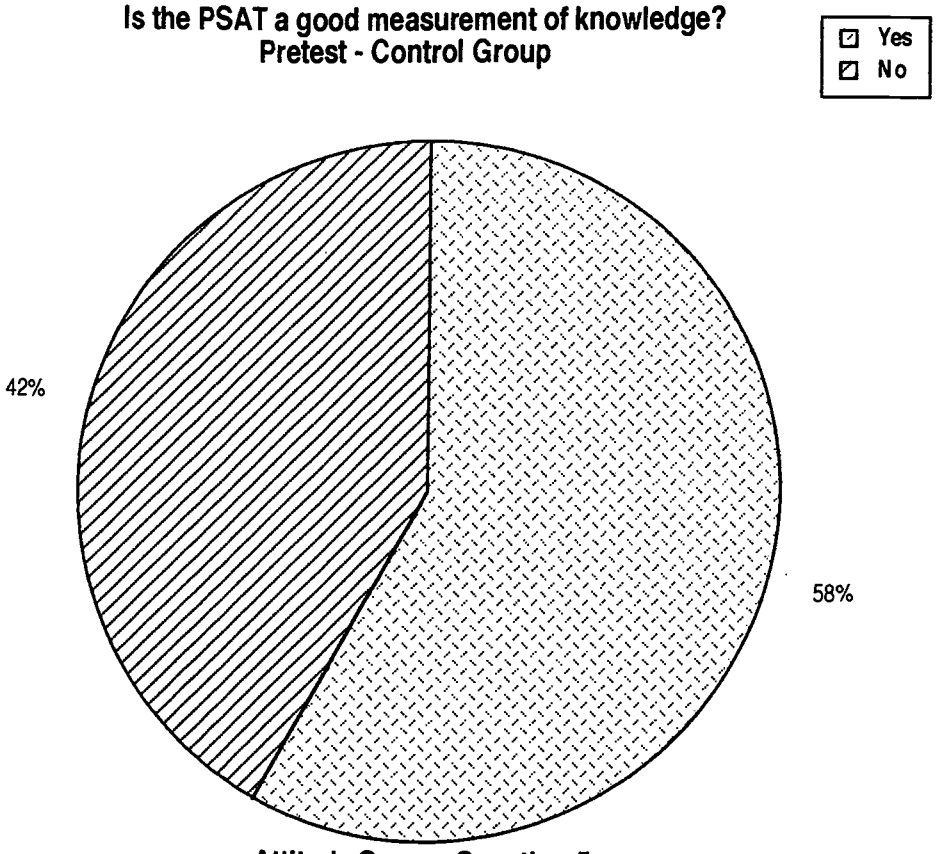
Is the PSAT a good measurement of knowledge?
Post test - Experimental Group



Graph 6

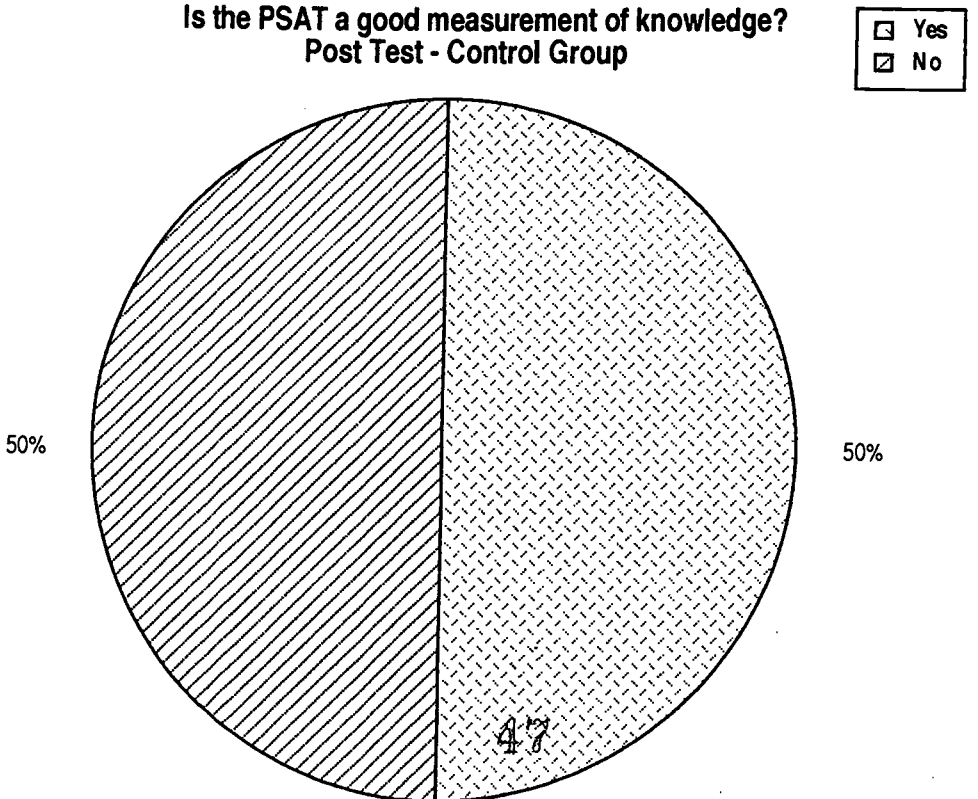
Attitude Survey Question 5

Is the PSAT a good measurement of knowledge?
Pretest - Control Group



Attitude Survey Question 5

Is the PSAT a good measurement of knowledge?
Post Test - Control Group



Summary

The primary focus of this experiment was to determine the effects of PSAT verbal skills training on secondary students. The other concern addressed in this research study was whether there was a correlation between the class grades and the PSAT scores. And finally, there was a determination as to whether there were any attitude changes after the intervention.

The paired-t resulted in a rejection of the primary null hypothesis (PSAT verbal skill training will have no effect on students' test scores). The comparison of the pre and post test means of the experimental group was significant at the .05 level when a paired-t test was used. This was the most significant finding of the study.

The next concern addressed was if there were any correlations between the class grades and the PSAT scores. After using a Pearson Correlation Coefficient test, the experimental group had a R-value of .308, and the control group had a R-value of .262. Both of these values were larger than the significance level of .05, therefore neither are significant, and they both accept the null hypothesis.

The last research instrument used was a paired-t to see if attitudes changed. The results for both the control and experimental groups had a significant level of .3558 larger than the .05. Therefore, the null hypothesis is accepted.

Conclusions, limitations recommendations, and implications will be discussed for the district and future researchers.

Chapter 5 Conclusions and Recommendations

Introduction

This chapter will continue to discuss the data gathered throughout this study. The researcher will present the conclusions drawn from this study and make recommendations to the school district. In addition to information received from statistical analysis, anecdotal data gathered from the students' attitude surveys will be discussed. Recommendations for further research on test taking skills for the verbal section of achievement tests will also be presented.

Conclusions of Data Analysis

In this study, the primary question of affecting students' test scores through the use of skill training for verbal achievement testing, proved to be significant at the .05 level. This is consistent with many other studies (Messick & Jungeblut, 1981; DerSimonian & Laird, 1983; Katzman, 1995) which also demonstrated significant improvement in students' test scores. Even though these various studies used a variety of different populations, they all determined significant results from their studies. Based on this, verbal skill training for achievement tests consistently enhances most students' ability to increase their test scores.

The second research dealt with the correlation between the course grade and the achievement score. This study showed moderate correlations, but national studies result in stronger correlations (Anastasi, 1981).

The attitude survey didn't have significance and since this is an original survey comparisons in other literature wasn't available. An attitudinal issue might be in creating an awareness for the relevance of the standardized tests.

Effects of Limitations

In Chapter 1 the following limitations were listed. After each limitation is a statement of the degree of impact or any unforeseen factors which may have affected the effort of the research.

1. The research study will be limited by the constraints of time.

   Certainly a longitudinal study to measure the results of continued achievement test skill training over a long period of time as opposed to just 10 weeks is in order.

2. Even though classes are randomly selected, a limitation may be that "gifted" or "honor" students may not be included in this selection.

   This proved to be a limitation because there are separate classes for honor students. Honor students have a high rate of students who not only take the PSAT, but go on to college. Therefore, these students would have an invested interest in learning to better their skills for the PSAT. Apathy among the students from this research, (none of whom were honor students) was the biggest limitation.

3. The researcher had no control over the population sample selected.

   Along the same lines as limitation number two, was the number of students who were either special education students (no more than five are main streamed in), or "at risk" (the school has a 40% drop out rate), or those who qualify for Title One (50% or more fall into this category of low reading skills).

   This proved not to be a limitation in that it did not reflect a standard randomization.

4. The researcher had little control over the halo or Hawthorne effect.

   This effect was especially true for the attitude survey. When students were asked if

they planned on going to college most answered yes even though the school has a 20-25% rate that goes on to college. Also when asked if they are familiar with the PSAT, ACT, or SAT many put yes even though they weren't familiar with them until the post test. Most students wanted to look good for me so it took away some of the validity of the survey.

5. The final limitation was that of students who enter late, and even those who drop out. This did not prove to be a problem because the researcher purposely kept an extra control and experimental group to pull from. If the researcher didn't have the extra groups to pull from there may have been a loss of as much as 40% from issues ranging from pregnancy, suspension, low attendance rates, students moving, and the students who just drop out.

Recommendations to Management

Based on the findings of this study, the use of verbal skills training for the PSAT can result in a significant improvement in students' test scores. Testing is an inherent part of the educational environment and can open many doors if successful. Educators are professionally obligated to help their students understand achievement test content especially that of which is closely related to the discipline they teach. With this in mind, the following recommendations should be considered:

1. A verbal skill training unit for the PSAT should be taught in all levels of Carl Hayden High School. This unit could be easily integrated into the English curriculum, perhaps during bell time, or at the beginning of each class.

2. A test-taking skill training workshop should be offered to all Sophomores and Juniors who plan to take the PSAT. A training session for seniors planning to take the SAT should also be offered. The counseling department or an experienced teacher may be responsible for implementing these workshops.

3. Awareness for teachers is necessary too. An in-service or workshop that teaches these skills and gives out useful lesson plans should be offered.

Implications

According to counselors at Carl Hayden High School 20% to 25% of graduating seniors go on to college. The population used for this study was average to below average students. This might have had an effect on their motivational level to do well. A study like this might have stronger results with a college bound population. This might be the reason why private companies that train for achievement tests report higher results than other studies.

A reported 23 sophomore students took the PSAT this year, up last from 18. Nine of those students come from the researcher's sophomore English class. Any influence from the intervention is purely speculative, but certainly promising thus far. The post test scores of the experimental group did not increase a great deal, but a seed has been planted. There was definitely more awareness about standardized tests in general and that can only help in the long run.

Appendix A

A RESEARCH STUDY

TO DETERMINE THE EFFECTS OF

PSAT VERBAL SKILLS TRAINING

ON SECONDARY STUDENTS.

by Marcella Reichenberger

A research proposal

submitted to Dr. Malcolm Enger

of the University of Phoenix

in partial fulfillment

of the requirements for the degree

of Masters of Arts in Education

June 1995

Problem Statement/Purpose

Problem Statement

According to the Reading Department Chair at Carl Hayden High School located in Phoenix, Arizona's inner city, students' scores on the Test of Achievement Proficiency (TAP) from 9th grade to 12th grade not only didn't increase, but decreased overall. The deviation is that test scores are declining when they should be increasing. Although most of the teachers have been working hard at meeting curriculum objectives and have incorporated writing into their curriculum, few implement methodology relating to achievement tests. Because achievement scores are standardized and used for research, placement, and university acceptance, the student fs scores are important.

This research project is being conducted to address and evaluate the success of a teaching program to increase verbal skills on the Preliminary Scholastic Aptitude Test.

Research Purpose

This research project is being conducted to determine the effects of teaching strategies on PSAT verbal skills of high school sophomores in their English class. A secondary purpose of this study is to determine if there is a relationship between the course grade {English} and the achievement score. The study will also provide information through an attitudinal survey to see if there will be any attitude changed about standardized tests after the treatment.

Problem Background

Despite their limitations, the public and news media often use standardized test scores as a barometer to measure the effectiveness of individual high schools. Right or wrong, achievement tests seem to be America's measuring stick. More than 1.6 million students annually take the Scholastic Aptitude Test (SAT), and some 2,600 colleges and universities use the test as part of their admissions process and also award a limited number of scholarships on the basis of such scores (Ornstein, 1993).

Although the Educational Testing Service, which developed the SAT, and the American College Testing Program, which developed the ACT, have long claimed that coaching does little to raise scores, controversy has surfaced around the question of coaching. Not only has ETS abandoned its original opposition to coaching -- now it is advising students to prepare for the tests -- the association of 2,600 colleges and universities that use the SAT in their admissions process are now selling computer software to help students study for the test (Ornstein, 1993). Private coaching organizations, such as Kaplan and Princeton Review prepare students for the SAT. The Princeton Review program is a six-week program that prepares about 15,000 students a year. And the Kaplan program prepares approximately 20,000 students a year for SAT's (Ornstein, 1993).

The effects of test sophistication, or sheer test-taking practice, shows a tendency for the second score to be higher. Significant mean gains have been reported when alternate forms were administered after intervals ranging from one day to three years (Anastasi, 1989). Gains are not just limited to alternate forms. The individual who has had extensive prior experience in taking standardized tests enjoys a certain advantage in test performance over one who is taking

his or her first test (Milkman, Bishop, & Ebel, 1965). Part of this advantage stems from having overcome an initial feeling of strangeness, as well as from having developed more self-confidence and better test-taking attitudes.

Practice sessions can also be effective. Such familiarization training reduces the effects of prior differences in test taking experience (Anastasi, 1981). The effects of practice (repeated administrations of the same form of a test or readministrations of different forms of the same test) and coaching (nonspecified assistance) on various standardized tests have also been investigated (Fueyo, 1977). Droege (1966) found significantly higher increases on alternate forms of the General Aptitude Test Battery after one-, two-, and three-year retest periods for each subsample.

Another study analyzed the effects of classroom instruction in test-taking. Wahlsrom and Boersma (1968) introduced test-taking lessons in the classroom and found significantly higher scores for those children trained on the lessons (on the Verbal Reasoning Test of the Differential Aptitudes Test). They summarized: ". . .test-wiseness principles can be taught in the classroom and lead to improved test performance" (p.419). These test-wiseness principles provide students with a set of strategies for taking the test.

Research Questions

There are several research questions that need to be answered to fulfill the purpose of this study:

a. What is the effect of teaching academic strategies related to the verbal section of the PSAT to the students' post test scores?

b. What is the relationship of the students' English grade {score} to that of the

achievement score?

c. Do the students attitudes change after the PSAT verbal skills training?

The Scope of the Research

The research will be conducted over a period of 10 weeks from September, 1995 through November, 1995. The population for this research will consist of two classes of 24 lower level sophomore students at Carl Hayden High School. This is an inner city school in the Phoenix Union High School District, Phoenix, Arizona. One of the classes will represent the control group. It is assumed that these classes are typical of many in the Phoenix Union High School District at this level, and that the findings of this study would be applicable to other schools.

Permission to conduct this study will be through Kino Flores, Principal at Carl Hayden High School. Upon completion of this research, the results will be shared with Mr. Flores, the counseling department and the English department. If a significant increase in test scores occur, these test-taking strategies will be shared during a professional hour to all other teachers so that if they opt to try this the researcher will impart the information.

The Methodology of the Research

A pre-test and post-test will be given to two classes. The test that will be used is an old PSAT (Preliminary Scholastic Aptitude Test). This is a standardized test that measures developed verbal and mathematical reasoning. To keep in line with English curriculum only the verbal section of the PSAT will be taught. The test has two verbal sections of about 30 questions each

{30 minutes for each section}. The following three elements will be covered in the experimental group:

1. Analogies. Students will be familiar with analogy questions and with some of the relationships commonly expressed in analogies.

2. Sentence completions. Students will be able to choose the word or set of words that, when inserted in the sentence, best fits the meaning of the sentence as a whole. This will involve key words that provide clues to the logic of the sentence.

3. Critical reading questions. The students will be familiar with the types of critical reading questions, their directions, the skills they measure, and basic approaches to reading passages. More time will be spent on this segment of the verbal skills because there is more subject matter to cover, such as strategies for extended reasoning, paired passages, tips for critical reading questions, and vocabulary-in-context and comprehension questions.

The study will consist of one group learning specific strategies to the verbal achievement test given. For example, the teacher will have the students attempt one question per day during bell time {the first five to seven minutes of class}. Then the teacher will give the correct answer to the question by going over how to achieve the correct response {five to seven minutes}. Of course there will be a control group of similar aptitude that will not receive these test taking strategies. The differences in the scores of the sample groups from the pre-test and post-test will show the results of the verbal skills taught in one group and show if there were higher scores.

Data will also be collected from an attitudinal survey given to the experimental group concerning attitudes of standardized tests. Differences in scores on PSAT pre-tests and post-tests in both groups were collected to answer the research questions. The students' attitudes of the the

verbal skills instruction were determined by the use of a Likert-type rating scale.

Possible Findings

It is anticipated that this research study will find that:

A. There will be an effect on student achievement test performance as a result of PSAT verbal skill training.

B. There will be a relationship between the course grade and the achievement test score.

C. Attitudes and beliefs concerning standardized testing will be positive and significant as a result of the PSAT verbal skills instruction.

D. Verbal skill instruction will be made available to the researcher's colleagues.

References

Anastasi, A. (1981). Coaching, test sophistication, and developed abilities. American Psychologist, 36, 1086-1093.

Anastasi, A. (1989). Psychological testing (6th ed.). New York: Macmillan Publishing Company.

Chaika, G. (1985, December). Teaching test-taking techniques to the gifted. Clearing House, 59, 182-184.

College Board. (1992). Test Skills. New York: College Entrance Examination Board.

Droege, R. C. (1966). Effects of practice on aptitude scores. Journal of Applied Psychology, 50, 306-310.

Fueyo, V. (1977). Training test-taking skills: A critical analysis. Psychology in the Schools, 14, 180-183.

Gifford,C. S., & Fluitt J. L. (1978). Test-taking skills and test wiseness. Clearing House, 52, 53-55.

Millman, J., Bishop, C. H., & Ebel, R. (1965). An analysis of test-wiseness. Educational and Psychological Measurement, 25, 707-726.

Oberstein, A. C. (1993, Oct.). Coaching, testing, and college admission scores. Assessment Literacy, 77, 13-19.

Scruggs, T. E., & Mastropieri, M. A. (1988). Are learning disabled students "test-wise"?: A review of recent research. Learning Disabilities Focus, 3(2), 87-97.

Sielaff, M. (1995). Reading deficits related to achievement gap. Spalding Education Foundation News, 10, 2-7.

Wahlstrom, M., & Boersman, F. J. (1968). The influence of test-wiseness upon achievement. Educational and Psychological Measurement, 28, 413-420.

Appendix B

Standardized Test Attitude Survey

Gender: Male ____ female____

Directions: Mark the response that best fits your feelings or opinions.

1. I feel prepared when I take a standardized test. Yes____ No____
2. I plan on going to college. Yes____ No____
3. My standardized test's scores are important to me. Yes____ No____
4. I plan on taking the PSAT, SAT, or the ACT in in the future. Yes____ No____
5. Standardized tests are a good measurement of knowledge. Yes____ No____

Appendix C

RESEARCH PROJECT AGREEMENT FORM

This Formal Research Proposal is found to be acceptable and suitable for the Educational Research Project.

(Please type)

PROJECT TITLE A Research Study to Determine the Effect of Teaching Strategies on Verbal Achievement of Secondary Students

STUDENT NAME Marcella Reichenberger

DEGREE SOUGHT MAEd

GROUP MAEd 595/A

Student Signature

Faculty Member Signature

Professional Adviser Signature

6 — 28 — 95

Date

The Research Project which follows, titled

A Research Study to Determine the Effect of Teaching Strategies on Verbal Achievement of Secondary Students

by

Marcella Reichenberger

contains material of a confidential or proprietary nature to the organization at which the research was conducted. The project report is to be held in strictest confidence and is not to be released to any individual or organization for any purpose other than for verification of academic requirements for graduation and approval by external reviewers to ensure compliance with outcomes assessment criteria. I understand that one copy will be kept at the University of Phoenix in the permanent file of the researcher (student).

Marcella A. Reichenberger (Student's Name)	Marcella A. Reichenberger (Student's Signature)	6-28-95 (Date)
Carl Hayden High School (Organization Name)	Edward D. Doe (Signature of Official)	6-28-95 (Date)
Dr. Malcolm L. Engh (Faculty Member's Name)	(Faculty Member's Signature)	6-28-95 (Date)

Name Marcella A. Reichenberger
Address 5225 East Thomas #233
City Phoenix
Your UOP Campus Main Campus
0794

Work Phone (602) 440-4513
Home Phone (602) 840-5427
State AZ Zip Code 85018
Degree M.A. Ed. Group PDME

Statement of your research problem:

A research project to determine the effects of teaching strategies on verbal achievement of secondary students.

Did you design the instrument yourself? Yes X No X

If no, who developed it and please state the evidence of its validity:
The Preliminary Scholastic Aptitude Test is developed by the Educational Testing Service. Validity is conducted by the College Board Validity Study Service.

If yes, how will you validate it?
The attitude survey was designed by the researcher. It was validated/tested by 24 professional researchers at the University of Phoenix.

What is the size of your total STUDY population? 60

What is the size of the intended sample population? 30

How do you plan to sample the study population?
The population will come from two of the researcher's sophomore level English class.

How will the instrument be administered?
Both the PSAT and the survey will be administered before and after the intervention.

What kind of statistical tests do you plan to use?
Descriptive statistics including the mean, mode, median, standard deviation, and Z-score. Also T-tests, correlation analysis and coefficient of correlation will be used.

Lead Instructor: Dr. Malcolm Enger Instructor Signature: M. Enger

Name Marcella Reichenberger Work Phone (602) 271-4513

Address 5225 East Thomas #233 Home Phone (602) 840-5427

City Phoenix State AZ Zip Code 85018

Your UOP Campus Main Campus Degree M.A. Ed. Group PDME 0794

Brief statement of your research project:
(a) problem statement, (b) hypotheses, (c) methodology, (d) procedures.

(a) A research study to determine the effects of teaching strategies on verbal achievement scores of secondary students. (b) There will be an effect from teaching academic strategies related to the verbal section of the PSAT to the students' post test scores. © Instruments used will be a PSAT test and an attitude survey designed by the researcher. (d) A sample group, of 30 individuals will be given the treatment and both of the instruments. The control group of 30 individuals will be given both instruments.

Briefly describe the research instruments you used in your project

1) The Preliminary Scholastic Aptitude Test (PSAT) designed by the Educational Testing Service will be administered by the researcher to 60 participants. The instruments validity was proven by the College Board Validity Study Service.

2) The attitude survey designed by the researcher will be given to 60 participants. The instrument was reviewed and tested by 24 professionals who were employed in the area of study.

Lead Instructor: Dr. Malcolm Enger Instructor Signature: M. Enger

FORM B3: CODING KEY

Name Marcella Reichenberger

Column Variable Name (8 Character Max)	Variable Label (25 Character Maximum)	Range of Scores or Scale and Labels	Number
1-4	ID #	ID Number	0001-
5	Q1	Consumers refused to	1=A 2=B 3=C 4=D 5=E
6	Q2	It is ___ to emulate	"
7	Q3	We are surrounded	"
8	Q4	Professor Rivera argues	"
9	Q5	Her voice, ___ but	"
10	Q6	In some universities	"
11	Q7	The ___ nature of their	"
12	Q8	In the past I have	"
13	Q9	The danger is not ___	"
14	Q10	Despite the essay's	"
15	Q11	He always proceeded	"
16	Q12	Far from being the	"
17	Q13	Most ancient thinkers	"
18	Q14	Because most of	"
19	Q15	In her fiction,	"
20	Q16	The defendants	"

FORM B3: CODING KEY

Name Marcella Reichenberger

Column Variable Name (8 Character Max)	ID #	Variable Label (25 Character Maximum)	Range of Scores or Number Scale and Labels
1-4	ID #	ID Number	0001-
21	Q17	The main focus of the	1=A 4=D 2=B 5=E 3=C
22	Q18	The author implies	" "
23	Q19	The quotation from	" "
24	Q20	The author mentions	" "
25	Q21	The author's tone	" "
26	Q22	In developing the	" "
27	Q23	Who are the "uninitiated"	" "
28	Q24	The authors of Passage	" "
29	Q25	The author of Passage 2	" "
30	Q26	In line 82, "fugitive"	" "
31	Q27	The end of Passage 2	" "
32	Q28	The authors of both	" "
33	Q29	If it can be assumed	" "
34	Q30	Wool : Sheep ::	" "
35	Q31	Principal : School ::	" "
36	Q32	Orchard : Apples ::	" "

FORM B3: CODING KEY

Name Marcella Reichenberger

Column Variable Name (8 Character Max)	Variable Label (25 Character Maximum)	Range of Scores or Scale and Labels	Number
1-4	ID #	ID Number	0001-
37	Q33	Request: Demand::	1 = A 4 = D 2 = B 5 = E 3 = C
38	Q34	Cushion: Chair::	" "
39	Q35	Paint: Portrait::	" "
40	Q36	Amorousness: Lover::	" "
41	Q37	Alleviate: Severe::	" "
42	Q38	Vertigo: Dizziness::	" "
43	Q39	Brackish: water::	" "
44	Q40	Atrophy: Muscle::	" "
45	Q41	Reprieve: Punishment::	" "
46	Q42	The author mentions	" "
47	Q43	In lines 40-43,	" "
48	Q44	It can be inferred	" "
49	Q45	According to the	" "
50	Q46	In the last	" "
51	Q47	In the last paragraph	" "
52	Q48	The primary purpose	" "

FORM B3: CODING KEY

Name Marcella Reichenberger

Appendix C

Column Variable Name (8 Character Max)	Variable Label (25 Character Maximum)		Range of Scores or Scale and Labels	Number (8
1-4	ID #	ID Number	0001-	
53	Q49	In the second paragraph	1 = A 4 = D 2 = B 5 = E 3 = C	
54	Q50	It can be interred from	"	"
55	Q51	Castiglione's book	"	"
56	Q52	The third paragraph (93-30)	"	"
57	Q53	The author most likely	"	"
58	Q54	The change in portrait	"	"
59	Q55	The author suggest	"	"
60	Q56	The author would most	"	"
61	Q57	The last paragraph suggets	"	"
62	Q58	Which of the following	"	"
63	Q59	Gender	1 = male 2 = female	
64	Q60	I feel prepared when	1 = yes 2 = no	
65	Q61	I plan on going to college	"	"
66	Q62	My standardized tests	"	"
67	Q63	I plan on taking the PSAT, ACT or SAT	"	"
68	Q64	Standardized Tests are a good measurement	"	1

FORM B3: CODING KEY

Name Marcella Reichenberger

Column Variable Name (8 Character Max)	Variable Label (25 Character Maximum)	Range of Scores or Scale and Labels	Number
1-4	ID #	ID Number	0001-
69	Q65	Scoring	1 = 80-100 4 = 60-69 2 = 70-79 5 = 10-59 3 = 70 19
70	Q66	Group numbers	1 = Group 1 (experimental) 2 = Group 2 (control)
71	Q67	grades →	←

FORM B3: CODING KEY Reichenberger 69

Name [illegible]

Column Variable Name (Character Max)	Variable Label (25 Character Maximum)	Range of Scores or Scale and Labels	Number (8
1-4	ID #	ID Number	0001-
5-6	Q1	Pre # right	actual #
7-8	Q2	Post # right	actual #
9	Q3	Group	1 2
			1=control 2=exp

FORM B4: INSTRUCTIONS FOR THE ANALYST

Name Marcella Reichenberger

Directions for the Analyst	Group(s) to be analyzed	Survey items to be analyzed
Frequency Distribution, Descriptive statistics, and Barchart for nominal variables Descriptive measures: Mean, Mode, Medium, Standard Deviations + z scores	All	Q1 - Q58 Q60 - Q64
T-Test for PSAT and attitude survey paired t	All Q66	Q1 - Q58 by Q60 - Q64
Correlations	Both	Q - 59 to Q61 1347 grade college - Q61 to Q65 6 grade (Q65 to Q66) ? paired T
T-Test Academic Grades and test achievement	Q66 group	Q67

Lead Instructor: _____ Instructor Signature: _____

Appendix D

References

Alderman, D. L., & Powers, D. E. (1980). Effects of special preparation on SAT-Verbal scores. American Educational Research Journal, 17 (2), 239-251.

Anastasi, A. (1981). Coaching, test sophistication, and developed abilities. American Psychologist, 36, 1086-1093.

Anastasi, A. (1989). Psychological testing,6. New York: Macmillan Publishing Company.

Chaika, G. (1985, December). Teaching test-taking techniques to the gifted. Clearing House, 59, 182-184.

College Board. (1992). Test skills: A test preparation program for the PSAT/NMSQT. New York: Educational Testing Service.

Crouse, J., & Trusheim, D. (1989). The case against the SAT. Chicago: The University of Chicago Press.

DerSimonian, R., & Laird, N. (1983). Evaluating the effect of coaching on SAT scores: A meta-analysis. Harvard Educational Review, 53, 1-15.

Donner, M. (1981). How to beat the SAT, and all multiple-choice tests. New York: Workman.

Droege, R. C. (1966). Effects of practice on aptitude scores. Journal of Applied Psychology, 50, 306-310.

Dyer, H. S. Does coaching help? College Board Review, 1953, 19, 331-335.

Fueyo, V. (1977). Training test-taking skills: A critical analysis. Psychology in the Schools, 14, 180-183.

Gifford, C. S., & Fluitt J. L. (1978). Test-taking skills and test wiseness. Clearing House, 52, 53-55.

Hymel, G. M., Guedry-Hymel, L. (1987, Oct.). Promoting study skills and test-taking techniques. NASSP Bulletin, 71 (501), 97-100.

Ligon, G, D. (1983). Preparing students for standardized testing. Testing in the Schools 19.

Katzman, J. (1995, March). Research by roper marketing and public opinion research. The Princeton Review.

Messick, S., & Jungeblut, A. (1981). Time and method in coaching for the SAT. Psychological Bulletin, 89, 191-216.

Millman, J., Bishop, C. H., & Ebel, R. (1965). An analysis of test-wiseness. Educational and Phychological Measurement, 25, 707-726.

Millman, J., & Pauk, W. L. (1969). How to take tests. McGraw Hill, Inc.

Oberstein, A. C. (1993, Oct.). Coaching, testing, and college admission scores. Assessment Literacy, 77, 13-19.

Project Prime. (1995). Program description and inventory. Tempe, Arizona: Arizona State University, A College Readiness Resource.

Reynolds, A. J., Oberman, G. L., & Perlman C. (1988, Jan). PSATcoaching for urban gifted forstudents. Journal of Educational Research 81, 155-162.

Robinson, A., & Katzman, J. (1993). Cracking the new SAT & PSAT. New York: Villard Books.

Samson, G. E. (1985, May-June). Effects of training in test-taking skills on achievement test performance: A quantitative synthesis. Journal of Educaional Research, 78(5), 261-266.

Scruggs, T. E., & Mastropieri, M. A. (1988). Are learning disabled students, "test-wise"?: Review of recent research. Learning Disabilities Focus 3(2),87-97.

Sielaff, M. (1995). Reading deficits related to achievement gap. Spalding Education Foundation News, 10, 2-7.

Smyth, F. L. (1989, Spring). Commercial coaching and SAT scores. The Journal of College Admissions, 2-9.

Thorndike, R.L. (1977). Causation of Binet IG decrements. Journal of Educational Measurement, 14, 197-202.

Wahlstrom, M., & Boersman, F. J. (1968). The influence of test-wiseness upon achievement. Educational and Psychological Measurement, 28, 413-420.

Whimbey, A. Intelligence can be taught. New York: Dutton, 1975.

Wiggins, J. D. (1992, March). Beating the SAT: Playing the game. The School Counselor 39, 301-302.

TM026022

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
Educational Resources Information Center (ERIC)

ERIC

REPRODUCTION RELEASE

(Specific Document)

I. DOCUMENT IDENTIFICATION:

Title: A Research Study to determine the Effects of PSAT Verbal Skills Training on Secondary Students

Author(s): Marcella A. Reichenberger

Corporate Source: University of Phoenix

Publication Date: March 1996

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic/optical media, and sold through the ERIC Document Reproduction Service (EDRS) or other ERIC vendors. Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following two options and sign at the bottom of the page.

	The sample sticker shown below will be affixed to all **Level 1** documents	The sample sticker shown below will be affixed to all **Level 2** documents	
☑ Check here **For Level 1 Release:** Permitting reproduction in microfiche (4" x 6" film) or other ERIC archival media (e.g., electronic or optical) ***and*** paper copy.	PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY Sample TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)	PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN OTHER THAN PAPER COPY HAS BEEN GRANTED BY Sample TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)	☐ Check here **For Level 2 Release:** Permitting reproduction in microfiche (4" x 6" film) or other ERIC archival media (e.g., electronic or optical), but ***not*** in paper copy.
	Level 1	**Level 2**	

Documents will be processed as indicated provided reproduction quality permits. If permission to reproduce is granted, but neither box is checked, documents will be processed at **Level 1**.

"I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic/optical media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries."

Sign here→ please

Signature: Marcella A. Reichenberger	Printed Name/Position/Title: Marcella A. Reichenberger/Secondary/Teacher
Organization/Address: University of Phoenix 4615 East Elwood Street Phx. AZ 85072-2069	Telephone: (602) 840-5427 FAX: E-Mail Address: MReiche@hayden.edu Date: 1/10/97

(over)

III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, *or*, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor:
Address:
Price:

IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name:
Address:

V. WHERE TO SEND THIS FORM:

Send this form to the following ERIC Clearinghouse:

ERIC Clearinghouse on Assessment and Evaluation
210 O'Boyle Hall
The Catholic University of America
Washington, DC 20064

However, if solicited by the ERIC Facility, or if making an unsolicited contribution to ERIC, return this form (and the document being contributed) to:

ERIC Processing and Reference Facility
1100 West Street, 2d Floor
Laurel, Maryland 20707-3598

Telephone: 301-497-4080
Toll Free: 800-799-3742
FAX: 301-953-0263
e-mail: ericfac@inet.ed.gov
WWW: http://ericfac.piccard.csc.com