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The Correlation of Reading Outside School and Reading Proficiency

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THE CORRELATION OF READING OUTSIDE SCHOOL AND READING PROFICIENCY

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Abstract

The purpose of this study was to investigate the relationship between time spent reading outside of school and reading proficiency, as measured by the Reading Comprehension component of the California Achievement Test.

The underlying philosophy of this research stressed that the best way to develop reading ability is to provide abundant opportunity for experiencing reading.

The research was conducted at a small, rural school in western New York State. As part of the recreational reading program, Book-It!, students were required to record the amount of reading they did outside of school each day for five months. The students' reading proficiency was determined using the grade equivalency score obtained on the Reading Comprehension subtest of the California Achievement Test (C.A.T.), which was part of the research site's district-wide yearly testing.

These numbers were then statistically analyzed to determine the predictive relationship of time spent reading outside of school and reading proficiency, as determined by the Reading Comprehension subtest of the C.A.T.

The results of this study indicate that there is no relationship between the number of minutes a student spends reading outside of the classroom and his reading proficiency. There does appear to be a strong educationally important difference in the amount of growth shown on the Reading Comprehension subtest of the C.A.T. and the number of months a student chooses to participate in a recreational reading program.

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Chapter I

Statement of the Problem

Purpose

The purpose of this study was to investigate the relationship between time spent reading outside of school and reading proficiency, as measured by the Reading Comprehension component of the California Achievement Test.

Need for the Study

Not all elementary educators are reading specialists. The increased awareness of the value of the ability to read is evident in schools, but not all teachers encourage reading outside of school. Unfortunately, many teachers at the research site believe that the recent educational philosophy which emphasizes reading and writing is another passing phase.

Imparting the ability to read, although very important, is not the only reason to teach reading. Voluntary reading "allows our society to share in the wisdom and delight of our civilization, and ultimately our capacity for intelligent self government" (Boorstin, p. IV, 1984).

Although test scores should influence the direction of learning within a school, other factors of learning

must also be considered. By showing a significant correlation between time spent on task and achievement, one can realize the importance of encouraging the use of students' time on relevant and purposeful activities.

It cannot be assumed that students will read for pleasure just because they have time on their hands. They need the guiding direction of educators who believe that reading outside of school is an important and valid learning tool. Teachers may be seeking proven rationale to encourage voluntary reading. This study lends itself as information to be considered when deciding if a recreational reading program is beneficial.

Hypotheses

1. There will be at least a moderate predictive relationship between time spent reading outside of school and reading proficiency, as measured by the California Achievement Test, subtest Reading Comprehension, by using a commonly expected benchmark for judging the strength of a relationship, Coefficient of Determination (r^2) = .20.

2. There will be at least a moderate treatment effect ($r_p{}^{b2}$ = .20) on the Reading Comprehension subtest of the California Achievement Test scores between those students who were in Book-It! for five months and

those students who were in Book-It! for two months or less.

3. There will be at least a moderate treatment effect (r_{pb}^2 = .20) on the Reading Comprehension subtest of the California Achievement Test scores between those students who were in the recreational reading program Book-It! for five months and those students who were in Book-It! for two months or less, when these students completed fifth grade.

Definition of Terms

Pleasurable/Voluntary reading:

These terms refer to reading of any kind, excluding school tests and other materials assigned at school, completed during non-school hours.

Reading ability/proficiency/achievement:

These terms refer to a grade equivalent score derived from a standardized reading test. California Achievement Test, Reading Comprehension only, shall be the standard measure of evaluation for this study. Gates MacGinite, Reading Comprehension only, may also be used to validate previous scores.

Book-It!

This is a recreational reading program, sponsored by Pizza Hut. Each participating school or teacher sets

a monthly reading goal for their students. Each student who reaches the predetermined goal receives a certificate for a free personal pan pizza at Pizza Hut. This program runs from October to February.

The support of this particular program had allowed the researcher an avenue for gaining the necessary information for this research and also provided external rewards for the participants.

Limitations of the Study

Although the researcher had chosen a pool of one hundred students to access the necessary information, participation was voluntary, although encouraged through Book-It! As a result, a smaller number of students participated. It was therefore necessary to look at data comparing Book-It! to non Book-It! participants as well.

In order to record the amount of time reading outside of school, the students (aged 10-12) were responsible for keeping track of their reading time and of having a parent's signature to ensure recording honesty. There is a margin of human error to be expected.

Summary

As elementary school educators, teaching students to read is a priority in our daily lives. Educators

express the importance of reading for information and for pleasure. Unfortunately, the truth remains that many students read only in school.

While academic reading is important, pleasurable reading should be a priority of education as well. There are too many aliterate people (those who are capable of reading who choose not to do so) in our society.

This research may provide the data necessary for all educators, not just reading specialists, to realize the correlation between time spent reading outside of school and reading ability. It may help to encourage educational decision makers to promote pleasurable reading, and to develop lifelong readers.

Chapter II

Review of the Research

The underlying philosophy of this research stressed that the best way to develop reading ability is to provide abundant opportunity for experiencing reading. In 1977 Allington stated "Few can learn to do anything well without the opportunity to engage in whatever is being learned" (p. 60).

Nearly two decades ago Barbe and Abbott (1975) indicated that schools must have a reading program "which will produce not only readers but also children who will grow into adulthood loving books and constantly enriching their lives and the lives of others by what they have found on the printed page" (p. 20).

Holdaway (1979) pointed out that schools seemed to spend a great deal of time teaching literacy skills, but left little time for children to practice those skills. He felt that to develop and promote voluntary reading, children should be given frequent opportunities to read for recreation and to practice the skills learned from direct instruction. The development of voluntary reading would seem to be an assumed and logical purpose for teaching youngsters to read (Hall, 1971). Yet substantial numbers of children choose not to read, either for

pleasure or information (Morrow, 1982).

One of the clear points to emerge from research into reading failure was that there was no association between reading and pleasure (Irving, 1980, p. 7). Although the issues of reading standards and methods continued to attract considerable public attention, a notable lack of interest in leisure reading on the part of teachers, educational administrators, and researchers was reported by Greaney (1980). Despite the fact that the development of a leisure reading habit was an objective of primary school curriculum, there was a lack of empirical evidence on the extent to which this objective was attained (Greaney, 1980).

Prior to 1980, the limited available evidence on leisure reading examined the extent and correlates of leisure reading. American and British studies had indicated, for example, that the time and amount of leisure reading varied with pupil age. As children grew older, there was a pronounced decrease in the amount of time they spent in leisure reading, especially in book reading (Maxwell, 1977; Whitehead, Capey, & Maddren, 1975).

In Ireland, Greaney (1980) had 920 fifth grade students from eleven primary schools complete a diary of out-of-school activities on three specified days during

a one-week period. A standardized reading attainment test was administered to each pupil. As a result, Greaney showed that overall, 5.4% of leisure time was spent reading. A total of 22.2% of pupils did not devote any time to leisure reading; 22.9% spent from 10-55 minutes reading, 26.7% from 60-115 minutes, 16.0% from 120-175 minutes, and the remaining 12.2% read for a minimum of 180 minutes (range=180-505).

Greaney concluded the correlations between types of leisure reading and reading attainment suggest that those who obtain low scores on reading attainment tend to devote relatively little time to book reading.

The other important large-scale study was conducted by Wahlberg and Tsai (1984), who analyzed data from a stratified, nationwide sample of 13 year olds who participated in the 1979-1980 National Assessment of Educational Progress. These 2,890 students answered two items concerning leisure reading activity. Questions regarding hours of homework done the previous night, amount of television watched, the importance of reading ability, enjoyment of reading, self concept as a reader, and news gained from television, radio, newspapers, or magazines, were answered. Wahlberg and Tsai found positive relationships between students' answers and reading achievement, yet concluded that students' achievements in read-

ing appeared to be jointly influenced by a number of factors rather than by a single, dominant one.

The Book Industry Study Group (BISG) in 1984 noted that the number of readers under 21 years of age dropped 12% over the previous ten-year time period. The study group hypothesized that new forms of electronic entertainment may have diverted the attention of youth from books and urged educators to seek ways of encouraging young people to become voluntary readers.

Many educators believed that seduced by the convenience of television, videos and records, people who know how to read don't want to do so anymore. Compared to older generations, "people don't read," said C. Emily Feistritzer, director of the National Center for Education Information in Washington. "People are more distracted, and their attention spans are controlled by electronic media" (p. 9A). The National Longitudinal Study (NELS) of 1988 also measured the amount of outside reading of eighth graders, and makes a striking comparison to TV watching. These students spend, on average, twelve times as many hours watching TV as they do reading (Educational Testing Service, 1992). The A.C. Nielsen Co. reports an average American family watches television 49 hours a week. Ash Green, a senior editor at Alfred A.

Knopf Books in New York, thinks that these millions of TV watchers never develop the discipline and patience needed to read a book (Hamada, 1991).

Few studies provided precise data on how much reading schoolchildren did. Fewer still examined the relation between amount of reading and reading achievement. However, one study conducted by Anderson, Wilson and Fielding (1988) measured 155 fifth graders' competence as readers. Students' out-of-school activities were recorded for a period of several months. After again measuring the students' competence, the influence of the activities on reading growth during a several month period was determined. The researchers found that among all the ways students spent their time, reading books was the best predictor of several measures of reading achievement. However, on most days most children did little or no book reading, and it was concluded that the typical child read less than 25 minutes a day outside of school.

The principal conclusion from the study of Anderson et al. was that the amount of time a child spent reading books was related to the child's reading level in the fifth grade and growth in reading proficiency from second to fifth grade. Hence, if the question is "does

reading cause growth in reading proficiency?" the answer may be yes because it was concluded that book reading was a significant predictor of growth.

Jim Trelease (1989) believed that "Reading is a skill like all skills, the more you use it, the better you get at it" (p. 140). Trelease added, "The truth is today's students don't read very much, and therefore are not getting much better at it" (p. 141).

According to Benjamin Bloom (1964) a child's reading habits are developed early in life. By sixth grade the type of reader one is going to be has already been established. Some children are avid readers who can never find enough books to satisfy their needs. On the other hand, another group can barely be stimulated to browse. It is the latter group which presents a problem to librarians, teachers, and parents who attempt to find motivational devices to open up the world of books to such children (Hansen, 1977).

By 1986 there was widespread agreement among educators on the importance of encouraging students to develop lifelong, voluntary reading habits. A study of the attitudes of parents, principals, and teachers found that the development of voluntary reading was viewed as the responsibility of the school (Morrow, 1986). Morrow

reported that when compared with reading skills such as comprehension and word recognition, voluntary reading was regarded as important, but far lower in priority. Teachers felt they had little or no time to spend on the encouragement of recreational reading.

Findings like these suggest that school personnel had been assigned - or had assigned themselves - the role of teaching literacy skills, whereas parents were left with the responsibility of conveying the enjoyment of reading. Certainly, in their efforts to identify the characteristics of voluntary readers, researchers (Greaney, 1980; Maxwell, 1977; Morrow, 1983; Whitehead et al., 1975) have documented the crucial role played by the home. Nevertheless, it would seem that the school could also be a potent force in the promotion and development of voluntary reading. Too often, programs create individuals who can read, but choose not to (Morrow & Weinstein, 1986).

According to Daniel Boorstin, Librarian of Congress, aliterates (individuals who can read but choose not to) constitute as much of a threat to a democratic tradition built on books and reading as illiterates (Boorstin, 1984). Voluntary reading - or the lack of it - "will determine the extent of self improvement and enlightenment, the ability to share wisdom and the delights of our civilization,

and our capacity for intelligent self government" (p. (IV)).

Although there are no estimates on the number of aliterate Americans, Feistritzer and other educators point to the surveys which found that the number of students who read daily for pleasure dramatically declines as young people progress toward high school graduation. Many adult students cannot write well - a sign that they read infrequently, if at all (Hamada, 1991).

Voluntary reading is critical to a literate society (Niles, 1981). The world is rapidly changing, and its high technology economy needs educated workers who can learn quickly. One must be prepared to learn and change throughout life. If one doesn't have the habit of reading, that's difficult to do (Hamada, 1991).

Strickland and Morrow believe that it is time for schools to look beyond achievement test performance and to implement programs that include as a major purpose the development of voluntary reading (Strickland & Morrow, 1990).

Anecdotal records of schools that had supplemented their regular reading programs with "spring reading campaigns," "reading awareness weeks," and "reading celebrations," suggest that such programs invariably enhange students' enthusiasm and foster positive attitudes toward books (Irving, 1980; Manning & Manning, 1984).

Pizza Hut's Book-It! program, which began in the 1985-86 school year, has encouraged more than half the students in American elementary schools to obtain coupons for free pizzas depending on how many books they have read. Although the program costs Pizza Hut more than $100 million in free pizzas each year, the company says "We believe a child's potential is not just everybody's business. It is everybody's future" (Trelease, 1989, p. 146).

According to Selsky (1990), students who regularly read books, magazines, and newspapers displayed the highest reading proficiency. Correspondingly, students with the highest reading proficiency were the most active readers. While it is impossible to determine the cause and effect between reading and reading proficiency it is important to recognize, and thus promote, this relationship. Setting an environment conducive to literacy is one of the most positive ways to promote that interrelation (Rasinski & Fredericks, 1991).

The latest and thereby most relevant results by the Educational Testing Service (1992) showed that students are reading books, newspapers, and magazines a bit less in 1990 than in 1984, and they do less reading for fun as they grow older.

Beyond what students read at school, the National

Assessment of Educational Progress (NAEP) has, since 1984, measured what students read at home - the frequency of books, newspapers and magazines, and the frequency of reading for fun. The NAEP has established that students who read a lot also score higher in reading (Educational Testing Service, 1992).

In the 1990 assessment of reading, 13-year-old students who read at home daily scored higher than those who did so weekly, who, in turn, scored higher than those reading less frequently. The same was true at age 17. However, just 9% of nine year olds, 18% of thirteen year olds and 24% of seventeen year olds read books, newspapers, or magazines on a daily basis. At age 17, one in four read only on a monthly or yearly basis (Educational Testing Service, 1992).

The extent of "reading for fun" declined as students progressed in school. At age nine, 54% read on a daily basis. By age thirteen 35% did so, declining to 31% at age seventeen. It appears that as schools attempt to open up the world of reading, students turn to it less as a leisure pursuit (Educational Testing Service, 1992). It seems that although schools and parents do an adequate job of teaching most children to read, we have a long way to go in helping children become lifelong readers. Experts tell us that one way to

accomplish this is to create environments at home and school in which children have access to a variety of reading and writing for real purposes in their lives, and see others - peers and adult models - doing the same (Fredericks & Rasinski, 1990).

By sharing appropriate information about books and reading with parents, teachers can influence reading in their students' homes (Strickland & Morrow, 1990). Encouraging outside reading is in the domain of the family as well as the school and is the pursuit that can make a substantial contribution to reading proficiency. After all, students who read extensively tend to score higher in other academic subjects as well (Educational Testing Service, 1992).

Commenting on the family and community aspect of the America 2000 strategy, Harold Howe II, a former Commissioner of Education, stated: "We must consider the effects on children of their lives outside of school, which occupy 91% of their time" (Educational Testing Service, 1992, p. 4).

Considering that by the end of eighth grade a child has spent only 9,000 hours in school compared to 95,000 outside school, parents may need to involve themselves in home reading before they challenge a teacher as to "why isn't Johnny doing better in reading

this year" (Trelease, 1989).

There is a need to teach children that there is more to reading than simply knowing how. Mark Twain, as cited by Rasinski and Fredericks in 1991 (p.439), said "those who don't read good books have no advantage over those who can't."

Chapter III

The Research Design

Design of the Study

Purpose

The purpose of this study was to investigate the relationship between time spent reading outside of school and reading proficiency, as measured by the Reading Comprehension component of the California Achievement Test.

Hypotheses

1. There will be at least a moderate predictive relationship between time spent reading outside of school and reading proficiency, as measured by the California Achievement Test, subtest Reading Comprehension, by using a commonly expected benchmark for judging the strength of a relationship, Coefficient of Determination (r2 = .20.

2. There will be at least a moderate treatment effect (r_pb^2 = .20) on the Reading Comprehension subtest of the California Achievement Test scores between those students who were in Book-It! for five months and those students who were in Book-It! for two months or less.

3. There will be at least a moderate treatment effect (r_pb^2 = .20) on the Reading Comprehension subtest of the California Achievement Test scores between those students who were in the recreational reading program, Book-It! for five months and those students who were in Book-It! for two months or less, when these students completed fifth grade.

Subjects

The research was conducted at a small, rural school in western New York State. There were 100 sixth-grade students in the district. All students, including the remedial and handicapped population, were in heterogeneous classes of 25 students for reading instruction. The same instruction was provided for each class in fifty-minute periods, five times per week, from a teacher who specializes in reading. A special education teacher actively participated in one class to assist in meeting the needs of the students.

Methodology

Materials

All reading instruction and assignments were the same for each class. The students were encouraged, and thereby rewarded, to participate in a voluntary recreational reading program, Book-It!

Book-It! is a reading incentive program sponsored by Pizza Hut for students in grade K-6. It has been established to motivate children to read more by rewarding them for their reading accomplishments. This was the fourth year that Book-It! was used as the school's recreational reading program. The program ran from October 1, 1992 to February 28, 1993. At the outset of the program, the teacher set monthly reading goals for each child in the classroom.

As soon as the monthly reading goal was met, the student was given a Pizza Award Certificate. The student took the certificate to a Pizza Hut restaurant, where s/he was personally congratulated by the manager and given a free, one-topping Personal Pan Pizza. On the first visit the manager also gave the child a Book-It! button and star for the button. The child received another Personal Pan Pizza, along with a star, on each subsequent visit.

The students who read for all five months were given a pizza party in school. They also received an individual Certificate of Achievement.

It is required that all students at the research site take the California Achievement Test. This school-wide testing took place in May 1993. The grade equivalent scores from the subtest, Reading Comprehension,

were used to determine each student's reading proficiency.

The grade equivalent score of the subtest, Reading Comprehension, from the previous year was used for comparison to determine the impact of participation in Book-It! on one's reading achievement from fifth to sixth grade.

Procedures for Data Collection

The Book-It! monthly reading goals were set by the teacher. It was in this way that the number of minutes students read outside of school was obtained.

There were five predetermined categories. The students chose which category s/he wanted to read for each month. The student was always encouraged to read for pleasure through reading class, but to receive Book-It! recognition s/he had to read a Newbery Honor or Medal winning book; an autobiography or biography; a science fiction or mystery book; a book about another country or culture; and a book of the student's choice.

There was a second requirement each month. In October students met with the teacher and gave an oral report followed by discussion. For November it was required that each student create a poster which represented the book, and encouraged other students to read

it. In December there was an afternoon gathering where each student told two other students about the book he read, and listened to two other students tell about their book. During January each student read with a second grader for at least twenty minutes. In February students met with the teacher to discuss the book completed as well as a questionnaire about the recreational reading program. (For example, what did the student enjoy the most, what would be change about the program, etc.)

A third requirement was constant throughout the reading months. It was explained that the teacher wanted to learn about sixth-grade students and how much time they spent reading outside of school. A calendar was handed out the first school day of each month. Each student was to record the number of minutes s/he read each day. There were no minimum or maximum time periods established. The calendar was signed at first daily, then weekly, and finally monthly, by an adult in the home, to verify that the reading took place. The teacher collected the calendar at the end of each reading month.

The researcher assigned numbers to each student in a random way to assure anonymity. The calendars were used to calculate and record the average of minutes read per week for each student. Students who chose not to

read for a particular month were not penalized. Rather their final average was divided by the number of months they participated in the program. Those who chose never to participate were recorded as 0 reading per week. This established the independent variable (x), number of minutes spent reading outside of school.

The dependent variable (y), reading achievement, was established using the California Achievement Test, subtest Reading Comprehension. The May 1993 standardized testing occurred simultaneously in each of the four sixth-grade homerooms. The tests were corrected by computer through the local BOCES and the computer readout was made available to the researcher. The same readout from the previous year was also obtained.

The researcher was then able to record information by student's assigned number, number of months in the reading program, average number of minutes read per week, and grade equivalent of reading comprehension subtest of California Achievement Test for both fifth and sixth grade.

There were seven students who moved into the district and had not taken the California Achievement Test the previous year. Therefore, the statistical analysis of the variables was used for the remaining 93 students for whom all data were available.

Data Analysis

The independent variable (minutes spent per week reading) and the dependent variable (grade equivalency score on Reading Comprehension subtest of California Achievement Test for sixth grade) were analyzed for their means and standard deviations. Using this information the Coefficient of Determination (r2) was used to establish the predictive relationship between minutes of reading per week and the average change on the California Achievement Test, subtest Reading Comprehension.

The researcher also used the number of months a student chose to participate in the program and compared this to the amount of achievement obtained in both fifth and sixth grade. These variables were analyzed for the mean and standard deviation, and that information was used to determine not only the predictive relationship of these variables but also the treatment effect of participating in Book-It!

Summary

This research was conducted to investigate the relationship between time spent reading outside of school and reading proficiency, as measured by the Reading Comprehension component of the California Achievement Test.

The data were collected at a small, rural school

composed of 100 sixth graders. As part of the recreational reading program, Book-It!, students were required to record on a calendar the amount of reading they did outside of school each day. This information was verified by a parent's signature. The number of months in which each student participated in Book-It! was also recorded and used for analysis.

The research site's district wide testing utilized the California Achievement Test for its yearly assessment. For this research the student's reading proficiency was determined using the grade equivalency score obtained on the Reading Comprehension subtest of the California Achievement Test for both fifth and sixth grade.

These numbers were statistically analyzed using their mean and standard deviation, which could then determine the predictive relationship of time spent reading outside of school and reading proficiency, as determined by the Reading Comprehension subtest of the California Achievement Test, using the Point Biserial Coefficient Correlation (rpb^2).

The number of months a student participated in Book-It! was compared to his reading proficiency, as determined by the grade equivalency on the Reading Com-

prehension subtest of the California Achievement Test for both fifth and sixth grade in order to determine the treatment effect of Book-It!

Chapter IV

Analysis and Interpretation of Data

Purpose

The purpose of this study was to investigate the relationship between time spent reading outside of school and reading proficiency, as measured by the Reading Comprehension component of the California Achievement Test.

Hypotheses

Hypothesis No. 1

There will be at least a moderate predictive relationship between time spent reading outside of school and reading proficiency, as measured by the California Achievement Test, subtest Reading Comprehension, by using a commonly expected benchmark for judging the strength of a relationship, Coefficient of Determination (r^2) = .20.

The independent variable, minutes spent per week reading outside of school, had a possible range from 0-630 minutes for all sixth-grade students at the research site. The actual range for this group of students was 0-534 minutes. The mean for minutes read per week was about 90 minutes. The standard deviation for minutes read was 93.29 minutes.

The scores of the dependent variable, grade equivalent on the California Achievement Test, subtest Reading Comprehension, had an actual spread of 4.0-12.9 years. The mean equivalency on the Reading Comprehension component was 8.22 years. The standard deviation from the mean was about 2.4 years.

There is a weak relationship between the minutes read per week and the grade equivalency one receives on the Reading Comprehension subtest of the California Achievement Test. This is based on the Coefficient of Determination (r2) score of .08. This suggests that only 8% of the variation in the Reading Comprehension subtest can be explained by the number of minutes a student read each week. Therefore, approximately 92% of the variation is unexplained.

An inspection of the scatterplot graph does show global effect for the majority of students who read less than twenty minutes per week, for 12 of those 13 students the grade equivalent scores range from 5.1-6.6, but this fact must be interpreted very carefully since one person who read 50 minutes per week had a 4.2 level and the lowest comprehension level in the sample, at 4.0, reported reading on the average 112 minutes per week. Consequently, the finding on hypothesis one, is that clearly there is no relationship between the reported average

minutes spent reading outside of school and reading proficiency, as determined by the Reading Comprehension subtest of the California Achievement Test.

Hypothesis No. 2

There will be at least a moderate treatment effect ($r_pb^2 \geq .20$) on the Reading Comprehension subtest of the California Achievement Test scores between those students who were in the recreational reading program Book-It! for five months and those students who were in Book-It! for two months or less.

The mean score of the Reading Comprehension subtest of the California Achievement Test for the 42 students who read for five months of the recreational reading program Book-It! was 8.92 years. The 31 students who read for two months or less had a mean subtest equivalency score of 7.10 years.

The point biserial correlation coefficient (r_pb^2) was .14, showing that only 14% of the variation in grade equivalency scores on the Reading Comprehension subtest of the California Achievement Test was explained by knowing whether students were in the five-month treatment group or in the two-month-or-less treatment group.

Upon closer inspection, using 7.0 as the grade

equivalent cut-off, of the 43 students in the program for five months, 32 scored above the seventh grade level. Only one scored below sixth grade level on the Reading Comprehension subtest of the California Achievement Test.

Of the 31 students who spent two months or less in the program, only 10 scored at or above the 7.0 grade equivalent cut-off.

Hypothesis No. 3

There will be at least a moderate treatment effect ($r_{pb}^2 \geq .20$) on the Reading Comprehension subtest of the California Achievement Test scores between those students who were in the recreational reading program Book-It! for five months, and those students who were in Book-It! for two months or less, when these students completed fifth grade.

The students who read for five months in the recreational reading program Book-It! in sixth grade had a mean grade equivalency score of 7.66 on the fifth grade Reading Comprehension subtest of the California Achievement Test. The students who read for two or fewer months in Book-It! in sixth grade had a mean grade equivalency score of 6.47 on the fifth grade Reading Comprehension subtest of the California Achievement Test.

The Point Biserial correlation coefficient (r_{pb}^2) was .06, showing that only 6% of the variation in Reading Comprehension grade equivalency scores was explained by knowing whether students were in the five-month treatment group or in the two-month-or-less treatment group.

The null hypothesis of no statistically significant difference between the means must be accepted. (t=only .51 and a t value of 1.99 was required for rejection at the 95% confidence level.) This indicates that the difference of 1.19 in grade equivalency means was merely due to chance factors of sampling.

Since the two groups were statistically equivalent in their fifth grade performance on the Reading Comprehension subtest of the California Achievement Test, the next logical step was to see if there was a difference between these two groups in the amount of increased performance in reading on the same test by the end of sixth grade.

For the 43 sixth grade students who read for five months during the recreational reading program, Book-It! their mean test score on the California Achievement Test, subtest Reading Comprehension improved from 7.66 years at the end of fifth grade to 8.92 years at the end of sixth grade showing an increase of 1.26 years of growth.

Of the 31 sixth grade students who read for two or fewer months during the recreational reading program Book-It! their mean test score on the California Achievement Test, subtest Reading Comprehension improved from 6.47 years at the end of fifth grade to 7.1 years at the end of sixth grade showing an increase of .63 years of growth.

The difference in the amount of growth meant a comparison of 1.26 average grade equivalency years of growth for the five-month group compared to .63 average grade equivalency years of growth for the two-month-or-less group. Interestingly, this ratio shows exactly twice as much growth on average occurring for the five-month group as compared to the two-month-or-less group.

Hypotheses Findings

Although the results in the first and second hypotheses lead us away from claiming that the Book-It! program has any educationally important predictive relationship with how students score on the Reading Comprehension subtest of the California Achievement Test, the results of the investigation of the third hypothesis indicate that there is a strong educationally important difference in the amount of growth in C.A.T. Reading Comprehension scores between the student who of their

own accord volunteered for Book-It! participation for the full five months and those who volunteered for one or two months, or didn't volunteer at all.

Chapter V

Conclusions and Implications

Purpose

The purpose of this study was to investigate the relationship between time spent reading outside of school and reading proficiency, as measured by the Reading Comprehension component of the California Ahcievement Test. The researcher believed, and therefore presented through the review of literature, that the more time one spent on a task, the better one would become at performing that task.

The research site was chosen because the class of 100 students were grouped heterogeneously in four reading classes which received the same instruction and assignments from the same instructor. One of the factors which separated these students, in terms of reading, was how much time they chose to read outside of class. This was recorded as part of a voluntary recreational reading program encouraged school-wide, sponsored by Pizza Hut.

The research site used the California Achievement Test as their school-wide testing and evaluation instrument, therefore making the testing for this research a natural part of the school year. This also

allowed for a comparison of students from fifth grade testing to sixth grade testing. The reading comprehension subtest was chosen as the most relevant measurement because the researcher believed the key to reading is understanding, or gaining meaning, from what one reads, and this is the rationale for the Reading Comprehension subtest of the California Achievement Test according to both the test manual and school personnel at the research site.

Conclusions and Implications

Although the researcher expected at least a moderate predictive relationship between time spent reading outside of school and reading proficiency, as measured by the California Achievement Test subtest Reading Comprehension, no relationship was found between these two variables. The scatterplot graph did show a global effect for the majority of students, but statistically there was no significant change on one's grade equivalency score based on number of minutes a student read per week. This finding implies that an instructor cannot guarantee a student's success on the California Achievement Test, subtest Reading Comprehension, based solely on the amount of time a student reads outside of the classroom.

In addition to recording the amount of minutes a student read per week as the basis for time spent reading outside of school, it was also reported how many months each student volunteered to participate in Book-It! The students' scores were analyzed after dividing the students into two groups, those who read for all five months of the recreational reading program and those who read for two months or less. It was found that these two groups were statistically equivalent at the end of fifth grade, based on their grade equivalency scores on the Reading Comprehension subtest of the California Achievement Test. At the end of sixth grade, it was found that those who chose to participate in Book-It! for the full five months showed exactly twice as much growth, on average, on the Reading Comprehension subtest of the California Achievement Test, compared to the two-month-or-less group. This implies that the more months one spends as part of a recreational reading program, the better their test results will be on the California Achievement Test, subtest Reading Comprehension.

Although there is no predictive relationship between the number of minutes a student reads outside of the classroom and how students score on the Reading

Comprehension subtest of the California Achievement Test, there does appear to be a strong educationally important difference in the amount of growth in Reading Comprehension scores between the students who chose to participate in a recreational reading program for five months as compared to those who read for two months or less.

Therefore, this researcher shall continue to encourage students to read for pleasure outside of the classroom, and suggests that all adults involved with school-age children do the same.

Recommendations for Future Research

This study should be replicated to ensure it's reliability. The researcher would again recommend recording the amount of time spent reading outside of the classroom in two ways. First, the number of minutes a child reads each day/week and second, the number of months a child chooses to read as part of a recreational reading program should be reported.

Parents' participation was greatly appreciated in gathering reliable information. The requirement of parents to sign time calendars provided not only a check system, but also assisted to remind students that reading at home was expected. The researcher received many positive comments about this additional requirement

for Book-It! It is recommended that parents' support and encouragement be recognized as part of a study which investigates a variable such as reading outside of school.

Reading comprehension is understanding what one has read. There are many ways to gain this information. The researcher chose the testing tool because of the natural testing the school provides. There are many other tests, as well as interview techniques, to ascertain the same information. It may be beneficial to use more than one evaluation or assessment tool. Looking at one's cognitive comprehension is important, but it may be equally important to look at other factors such as one's attitude toward reading. It is recommended that future researchers look at various ways to watch, question and assess students rather than to just assess test scores.

As educators know, one test is only a snapshot of a person on one particular day. There were many students who had, compared to last year's test, lowered their Reading Comprehension grade equivalency score of the California Achievement Test. This implied that they had lost their ability to comprehend as well as they did in fifth grade. This was discouraging to the teacher, who believed strongly that growth had occurred in each

student. Subjective information should be just as important as objective information, when it comes to assessing students.

Classroom Implications

This researcher will continue to encourage reading outside of school, whether or not as part of a formal recreational reading program. However, this research does imply that the longer a student is part of such a program, the better he will comprehend.

It may be true that the push to read meaningful literature in the classroom has hooked kids on reading. This research has shown that students do spend time reading outside of school. It had been expected that little or no reading was actually occurring, as this was what the previous researchers stated in their findings. This study's research showed that there was much more leisure reading than was previously found to be the norm.

Book-It! has been a part of the research sites' reading emphasis for four years. It has now been decided that reading can be encouraged without the buttons, stickers and pizzas that many people felt to be contrary to their conviction that the pleasure of reading is intrinsic. Therefore, in this school a reading

month will be initiated with an emphasis on the joy of reading. This has great support from the teachers because it will be less time consuming than the use of charts and rewards. This researcher, although a supporter of this change in the interests of both the teachers and students, is concerned that a one-month push will not be enough to maintain the students' reading interest level as high as it was with a five-month program. The results of this study lead the researcher to believe that there will not be an important effect in reading test scores with just a one-month push. It appears that persistence in a program may be the key to it's success.

Summary

The results of this study indicate that there is no relationship between the number of minutes a student spends reading outside of the classroom and his reading proficiency, as determined by his grade equivalency score of the Reading Comprehension subtest of the California Achievement Test. There does appear to be a strong educationally important difference in the amount of growth on the Reading Comprehension subtest of the California Achievement Test and the number of months a student chooses to participate in a recreational reading program.

This researcher would suggest that all teachers, not only reading specialists, encourage students to spend time outside of school reading. This researcher continues to believe that spending time reading a good book after school, or right before bed, may be one of the best ways to end anyone's day.

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stud.#	#months	#min/wk	5th r.comp.	6th r.comp.
K001	5	89.5	9.6	8.8
K004	5	93.1	9.6	12.9
K008	5	175.75	7.9	12.9
K011	5	57.5	5.4	6.1
K012	5	37.75	5.8	6.7
K013	5	22.85	7.4	8.1
K014	5	47.4	9.6	12.9
K022	5	50.25	9.6	10.7
K024	5	60.4	5.5	6.6
K025	5	137.65	7.4	10.7
K026	5	197.75	5.2	6.1
K028	5	85.8	9.6	12.9
K033	5	53.75	5.1	5.6
K036	5	59.05	9.6	8.1
K037	5	85.5	6.1	7.8
K038	5	201.25	7.4	12.9
K040	5	66.5	7.4	8.8
K041	5	42.5	9.6	12.9
K043	5	82.7	9.6	9.5
K046	5	205.2	8.6	12.9
K047	5	66.25	6.1	7.2
K053	5	108.5	5	7.5
K055	5	86	5.4	6.6
K056	5	40.6	12.9	8.1
K057	5	71.5	6.4	7.5
K058	5	206.25	5.6	8.4
K059	5	99.8	6.1	7.8
K060	5	84.5	8.6	9.5
K064	5	79.2	8.6	10.7
K070	5	153.75	5.3	6.5
K072	5	20.8	6.5	6.6
K076	5	166.9	6.1	7.2
K080	5	435.85	7.9	9.5
K081	5	79.5	6.5	9.5
K083	5	49.95	5.3	7.8
K084	5	118.95	9.6	8.1
K085	5	211.8	5.3	6.1
K087	5	166.1	9.6	12.9
K089	5	153.45	5.6	6.7
K091	5	123.1	12.9	8.1
K092	5	176.75	12.9	9.5
K094	5	457.05	7.4	8.8

stud.#	#months	#min/wk	5th r.comp.	6th r.comp.
K032	4	583.69	9.6	12.9
K039	4	74.44	3.5	6.6
K044	4	157.81	8.6	9.5
K052	4	68.81	5.2	5.6
K067	4	113.44	5.3	6.2
K071	4	116.69	7.9	9.5
K077	4	81.94	3.2	6.6
K078	4	65.25	7.9	8.4
K082	4	88.38	7.9	10.7
K097	4	94.69	7.9	6.9
K018	3	245.67	5.3	6.6
K019	3	38.92	6.8	7.8
K020	3	38.75	8.6	12.9
K027	3	108.17	7.9	7.5
K062	3	38.67	6.8	12.9
K063	3	39.67	5.3	6.5
K086	3	63.42	6.4	7.2
K095	3	26.42	5.3	6.9
K098	3	38.75	12.9	10.7
K099	3	98.72	5.4	7.5
K007	2	52.38	5.7	6.6
K009	2	95	7.4	8.1
K030	2	36.38	6.1	6.5
K054	2	12.5	5.6	6.7
K066	2	14.38	6.4	6.7
K068	2	35	12.9	12.9
K074	2	100.5	6.5	8.4
K075	2	48.13	3.4	4.2
K090	2	100.63	7.9	10.7
K093	2	112.5	7.9	6.4
K096	2	26.75	6.1	5.7
K003	1	59.25	5.1	5
K015	1	13.75	6.1	6.6
K016	1	29.75	12.9	12.9
K017	1	47.5	5.3	6.7
K031	1	32.75	4.9	6.1
K034	1	112.5	4.2	4
K042	1	65	6.4	7.8
K049	1	33.75	6.8	10.7
K061	1	26.75	12.9	8.8
K073	1	110.5	7.9	7.2
K088	1	11.25	5.4	6.1

stud.#	#months	#min/wk	5th r.comp.	6th r.comp.
K002	0	0	6.5	6.1
K005	0	0	4.7	6.6
K006	0	0	3.3	5.7
K010	0	0	2.4	5.1
K023	0	0	6.1	5.5
K029	0	0	5.4	5.1
K035	0	0	2.9	6.4
K048	0	0	5.8	6.1
K069	0	0	9.6	8.8

Statistical Summary Sheet - Hypothesis Number One

x=minutes spent reading per week outside of school

y=grade equivalency score of Reading Comprehension sub-test of California Achievement Test

range x=(0-584.)

range y=(4.0-12.9)

$\overline{x}=90.08$

$\overline{y}=8.22$

$\phi x=93.29$

$\phi y=2.40$

$\Sigma n=93$

$\Sigma x=8,377.90$

$\Sigma y=764.10$

$\Sigma xy=74,604.10$

$\Sigma x^2=1,564,051.65$

$\Sigma y^2=6,813.51$

$b=.01$

$r=.28$

$r^2=.08$

Slope Coefficient (b):

$$b = \frac{\Sigma xy - n\bar{x}\bar{y}}{\Sigma x^2 - n\bar{x}^2}$$

$$b = \frac{74,604.10 - (93 * 90.08 * 8.22)}{1,564,051.65 - (93 * 90.08^2)}$$

$$b = \frac{74,604.10 - 68,862.56}{1,564,051.65 - 754,639.80}$$

$$b = \frac{5,741.54}{809,411.85}$$

$$b = .01$$

Y intercept (a):

$$a = \bar{y} - b\bar{x}$$

$$a = 8.22 - (.01 * 90.08)$$

$$a = 8.22 - .90$$

$$a = 7.32$$

(by computer = 7.57)

Coefficient of Determination (r^2):

$$r^2 = \frac{a\Sigma y + b\Sigma xy - n\bar{y}^2}{\Sigma y^2 - n\bar{y}^2}$$

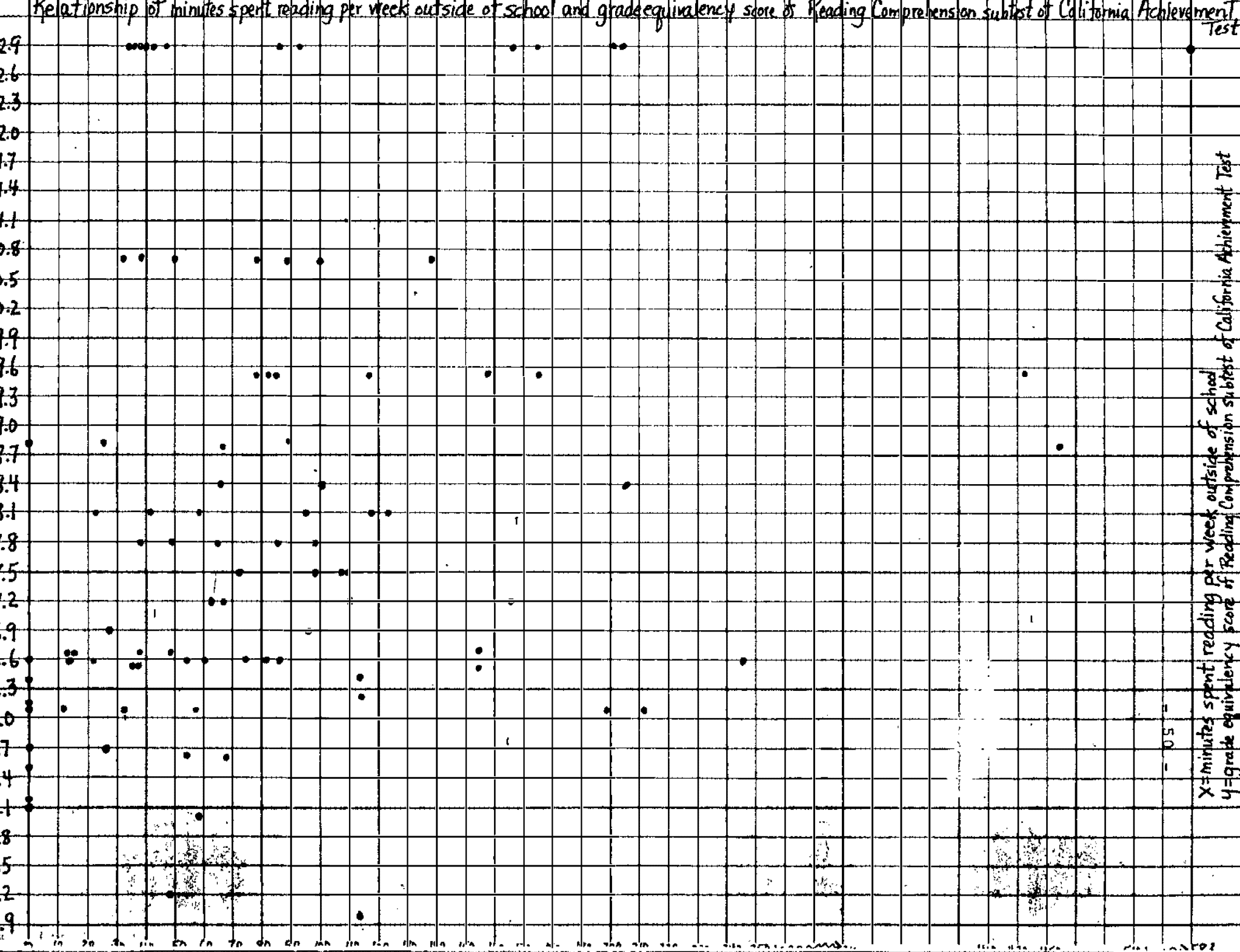
$$r^2 = \frac{(7.32 * 764.10) + (.01 * 74,604.10) - (93 * 8.22^2)}{6,813.51 - (93 * 8.22^2)}$$

$$r^2 = \frac{5,593.21 + 746.04 - 6,283.86}{6,813.51 - 6,283.86}$$

$$r^2 = \frac{55.39}{529.65}$$

$r^2 = .10$ by computer: $r^2 = .08$

$r = .32$ $r = .28$


Relationship of minutes spent reading per week outside of school and grade equivalency score on Reading Comprehension subtest of California Achievement Test
X=minutes spent reading per week outside of school
Y=grade equivalency score on Reading Comprehension subtest of California Achievement Test
r = .05

Statistical Summary Sheet - Hypothesis Number Two

x=number of months participated in Book-It!
0=5 month-reader
1=0-2 month reader

y=sixth grade Reading Comprehension score of California Achievement Test

range x=0-1

range y=(4.0-12.9)

$\bar{x}$=.42

$\bar{y}$=8.15

ϕx=.49

ϕy=2.42

Σn=73

Σx=31.00

Σy=594.70

Σxy=220.20

Σx^2=31.00

Σy^2=5,271.11

b=-1.81

r=-.37

r^2=.14

Slope coefficient (b):

$$b = \frac{\Sigma xy - n\bar{x}\bar{y}}{\Sigma x^2 - n\bar{x}^2}$$

$$b = \frac{220.20 - (73 * .42 * 8.15)}{31.00 - (73 * .42^2)}$$

$$b = \frac{220.20 - 249.88}{31.00 - 12.88}$$

$$b = \frac{-29.68}{18.12}$$

$b = -1.64$ by computer $= -1.81$

Y intercept (a):

$$a = \bar{y} - b\bar{x}$$

$a = 8.15 - (-1.64 * .42)$

$a = 8.15 - (-.69)$

$a = 8.84$

by computer = 8.92

$t ratio = ((r_{pb} \times \sqrt{n-2}) \div \sqrt{(1 - r_{pb}^2)})$

$= ((.14 \times \sqrt{71}) \div \sqrt{(1 - .14^2)})$

$= 1.19$

Coefficient of Determination (r^2)=

$$r^2 = \frac{a\Sigma y + b\Sigma xy - n\bar{y}^2}{\Sigma y^2 - n\bar{y}^2}$$

$$r^2 = \frac{(8.84 * 594.70) + (-1.64 * 220.20) - (73 * 8.15^2)}{5,271.11 - (73 * 8.15^2)}$$

$$r^2 = \frac{5,257.15 + (-361.13) - 4,848.84}{5,271.11 - 4,848.84}$$

$$r^2 = \frac{47.18}{422.27}$$

$r^2 = .11$ by computer: $r^2 = .14$

$r = .33$ $r = .37$

Statistical Summary Sheet - Hypothesis Number Three

x=number of months participated in Book-It!
0=5 month-reader
1=o-2 month reader

y=fifth grade Reading Comprehension score of California Achievement Test

range x=(0-1)

range y=(2.4-12.9)

$\bar{x}$=.42

$\bar{y}$=7.15

ϕx=.49

ϕy=2.44

Σn=73

Σx=31.00

Σy=522.10

Σy=200.50

Σx^2=31.00

Σy^2=4,168.03

b=-1.19

r=-.24

r^2=.06

Slope coefficient (b):

$$b = \frac{\Sigma xy - n\bar{x}\bar{y}}{\Sigma x^2 - n\bar{x}^2}$$

$$b = \frac{200.50 - (73 * .42 * 7.15)}{31.00 - (73 * .42^2)}$$

$$b = \frac{200.50 - 219.22}{31.00 - 12.88}$$

$$b = \frac{-18.72}{18.12}$$

$b = -1.03$ by computer $= -1.19$

Y intercept (a):

$$a = \bar{y} - b\bar{x}$$

$$a = 7.15 - (-1.03 * .42)$$

$$a = 7.15 - (-.43)$$

$$a = 7.58$$

by computer $= 7.66$

t ratio $= ((r_{pb} \times \sqrt{n-2}) \div \sqrt{(1 - r_{pb}^2)})$

$= ((.06 * \sqrt{71}) \div \sqrt{(1 - .05^2)}$

$= .51$

Coefficient of Determination (r^2):

$$r^2 = \frac{a\Sigma y + b\Sigma xy - n\bar{y}^2}{\Sigma y^2 - n\bar{y}^2}$$

$$r^2 = \frac{(7.58 * 522.10) + (-1.03 * 200.50) - (73 * 7.15^2)}{4,168.03 - (73 * 7.15^2)}$$

$$r^2 = \frac{3,957.52 + (-206.52) - 3,731.94}{4,168.03 - 3,731.94}$$

$$r^2 = \frac{19.06}{436.09}$$

$r^2 = .04$ by computer: $r^2 = .06$

$r = .20$ $r = .24$