Relationship Between Measures

of Academic Progress

and Reading Fluency Rate

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A Special Project

Presented to

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Relationship Between Measure of Academic

Progress and Reading Fluency Rate

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ABSTRACT

The purpose of this study was to explore the relationship of scores between two different reading assessments used to measure student reading skills. Second grade students were given the Measure of Academic Progress reading test as well as the Developmental Reading Assessment. The two tests vary in that fluency rates were only calculated in the Developmental Reading Assessment. Scores were calculated and correlated from these two assessments. The researcher found a significant positive correlation between the scores collected in this study.

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CHAPTER 1

Introduction

Background for the Project

Students at an elementary school in Southeastern Washington were considered proficient readers in elementary school when they were able to demonstrate reading that was fluent and accurate. Reading comprehension was also deemed an invaluable aspect of reading. Fluency, accuracy, and comprehension were the established skills in which students were assessed using the Developmental Reading Assessment (DRA) for kindergarten through second grade. The comprehension assessment was scored using a rubric based on a retelling of a story, which left room for rater discrepancy and subjectivity.

The purpose and process of reading aptitude assessments changed after the No Child Left Behind Act (NCLB) was enacted in 2001 (Allington, 2006). Parents, teachers, and administrators in the district recognized the need for a valid and widely-used

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assessment to gauge the progress of reading skills

beginning in elementary school and continuing through

high school with limited subjectivity. In 2006, the

Measurement of Academic Progress (MAP) test was

adopted by the district to assess the progress of

reading proficiency.

Statement of the Problem

Though the MAP test provided thorough reading

data for the district, reading fluency was not a

measured component of the test. There was a

possibility that reading fluency rates had a linear

relationship to MAP test scores. The researcher sought

to determine if there was a correlation between

reading fluency rates and the scores received on the

reading MAP test.

Purpose of the Project

The study explored the relationship between two

required reading assessments for second graders in the

district. A significant positive or negative

relationship was possible as a predictor of success in

both reading assessments. The existence or non-existence of a relationship between reading fluency and scores achieved on the reading MAP test offered an opportunity for additional student interventions and goal-setting in reading.

Delimitations

The study was conducted in September, 2011, at an elementary school in Southeastern Washington. The school served students from preschool to second grade. The population of the community was 5,714 according to the 2010 United States Census. The Office of Superintendent of Public Instruction (OSPI) reported a student enrollment in the district in May, 2011, of 513 students, with 56.1% males and 43.9% females. Demographics of the elementary school were identified as 50.8% Hispanic, 46.1% White, 1.2% two or more races, 0.8% Asian/Pacific Islander, 0.6% American Indian/Alaskan Native, 0.6% Asian, 0.6% Black, and 0.2 Pacific Islander. Of the student population, 65.1% qualified for free or reduced meals, 21.6% of students

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received special education services, 32.9% were transitional bilingual students, and 16.8% of students had migrant status (OSPI, 2011).

The participants in the study included 23 of the second grade students in the researcher's homeroom classroom and 9 additional second grade students from the researcher's reading class. All of the participants had received reading instruction from the researcher at the time of the data collection. Reading data was collected using each participant from their MAP test scores as well as their reading fluency rates at the time of the MAP testing.

Assumptions

The researcher used reading data from the primary second grade classroom where the researcher taught on a fulltime basis. The researcher also collected data from the guided reading group, which consisted of nine students from four different second grade classrooms in the school. Another assumption made by the

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researcher was that reading skills were taught

consistently by each teacher at the school.

Hypothesis

Second graders demonstrated a significant

positive correlation between their reading

fluency rates and their MAP reading scores. More

words read correctly per minute by a student resulted

in a higher score on the reading MAP test.

Null Hypothesis

Second graders did not demonstrate a significant

positive correlation between reading fluency rate and

the reading MAP test scores.

Significance of the Project

The knowledge of the relationship of the

correlation between reading fluency rates and scores

received on the reading MAP test provided teachers

with new information about the two assessments used in

the school. The researcher recommended that, if the

study proved to be positive, a new vein of

interventions and goal-setting be established in the

second grade classrooms in order to improve reading

scores with both fluency rate and MAP test

assessments.

Procedure

Reading fluency data was first collected in

September, 2011, from all participants. The

participants were 23 second grade students in the

researcher's homeroom classroom and 9 additional

second grade students from the researcher's reading

class. The participants in the study then took the

reading MAP test later that month in September, 2011.

Each participant was tested according to the district-

approved procedures.

The reading fluency rate assessment was given at

each participant's individual reading level,

determined by the most recent DRA test. The reading

MAP test was given in the computer lab and students

had unlimited time to complete the test.

The researcher then correlated the two scores on

each assessment to discover the correlational

coefficient. The results denoted the relationship
between the variables as well as the score for
significance using Pearson r values.

Definition of Terms

fluency. Fluency was defined as the ability to have read a text quickly, accurately, and with proper expression.

intervention. An intervention was defined as a supplementary reading program or set of activities, techniques, strategies that was given to students who were not achieving at grade level or lacked specific reading skills.

prosody. Prosody was defined as a reader's ability to read with appropriate rhythm, intonation, emphasis, and expression.

self-efficacy. Self-efficacy was defined as a belief that oneself was capable of success with a given task, set of goals, or performance.

sublexical reading fluency. Sublexical reading fluency was defined as the rate at which a student was able to read parts of a word such as phonemes, letter names, or individual sounds.

Acronyms

CSI. Comprehensive Strategy Instruction.

DIBELS. Dynamic Indicators of Basic Literacy Skills.

DRA. Developmental Reading Assessment.

MAP. Measure of Academic Progress.

NCES. National Center for Educational Statistics.

NCLB. No Child Left Behind.

NRP. National Reading Panel.

NWEA. Northwest Evaluation Association.

OSPI. Office of Superintendent of Public Instruction.

PLG. Pearson Learning Group.

RIT. Rausch Unit.

TOWRE. Test of Word Reading Efficiency.

CHAPTER 2

Review of Selected Literature

<u>Introduction</u>

According to Ardoin, Eckert, and Cole, reading was argued to be the most critical skill to be learned in school, yet 17% of students had reading difficulties in the first three years of schooling (Ardoin, Eckert, & Cole, 2008). Thousands of researchers had studied reading to understand the process and be able to better serve students.

<u>Fluency and Comprehension</u>

The critical nature of learning to read has inspired researchers to investigate the modalities of reading. Rasinski and the other researchers in his study challenged the notion that reading fluency rates were the sole assessment for measuring fluency (Rasinski, Rikli, & Johnson, 2009). The added factor in Rasinski's research was the characteristics of oral reading prosody.

Students who read with successful skill in prosody not only demonstrated fluency but also proved in the study that they comprehended the text. The prosody rubric developed by Rasinski and his research team graded first, second, and third grade students in three fluency areas: phrasing and expression, accuracy and smoothness, and pacing. Across all three grade levels, students who scored greater in prosodic reading tended to score higher in comprehension of the text. The outcome of this research study further validated the importance of fluent reading in relationship to comprehension (Rasinski et al., 2009). However, Schwanenflugel, Meisinger, Wisenbaker, Kuhn, Strauss, and Morris questioned if fluency could benefit comprehension beyond the decoding process (Schwanenflugel, Meisinger, Wisenbaker, Kuhn, Strauss, & Morris, 2006). Because the important relationship between reading fluency and comprehension had been researched for decades (LaBerge & Samuels, 1974), it had developed a significant need for a balanced and

comprehensive reading program. Schwaneneflugel and
the other researchers in her team conducted this
research study with a model that was used to improve
fluency and automatic reading. Data collected on each
student was extensive. The battery of reading tests
assessed participants in the areas of: word and non-
word processing, text reading, spelling, autonomous
reading, and reading comprehension. Standardized
tests were also included in this battery.
Schwaneneflugel's results conflicted with Rasinski's
results. The model used by Schwanenflugel did not
accomplish the fluent and automatic readers that they
had hypothesized. However, from the study, they
discovered that, in order to obtain a balanced and
comprehensive reading program, educators had to look
beyond fluency skills. Schwanenflugel described how
more emphasis on vocabulary, word and inference skills
could be taught to account for reading comprehension
(Schwanenflugel et al., 2006).

Rasinski emphasized that fluency was important for teachers to measure whether they counted words read correctly per minute or assessed prosody. Rasinski noted that his study was a correlational study and did not determine causation. He implied that increasing reading fluency may have a positive impact on reading comprehension (Rasinski et al., 2009). This was implied because of the high associations found between fluency and comprehension in his study.

Research to Solve the Reading Problem

The National Center for Educational Statistics (NCES) reported that over a third of fourth grade students were achieving below grade level in reading in 2004. Ardoin and others from this research team designed an experimental study that compared two intervention programs targeted at reading fluency in order to move students toward grade level (Ardoin et al., 2008). The first intervention treatment was titled Repeated Readings, which involved re-reading

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passages for fluency. The second intervention
treatment was titled Multiple Exemplars, which
involved reading three different passages with similar
contexts.

Students were scored based on a generalization
given subsequently to the intervention treatment.
Support for the researchers' hypothesis was found.
The slope of improvement in the participants was
greater when Repeated Readings intervention treatment
was used as opposed to Multiple Exemplars (Ardoin et
al., 2008).

Early literacy success was measured by sublexical
reading fluency in a study by Burke, Crowder, Hagan-
Burke, and Zou. This study monitored the progress of
early special education students in the areas of:
phonological awareness, phoneme decoding, letter
naming, and automatic word recognition (Burke,
Crowder, Hagan-Burke, & Zou, 2009). Through these
assessments, the researchers developed a study that
predicted the reading fluency rates of the students.

Some of the components that were monitored in this study were also named in the report by the National Reading Panel (NRP) of the five most critical areas of reading. The areas the panel (2000) identified were: phonemic awareness, phonics, fluency, vocabulary, and text comprehension (NRP, 2000).

The purpose of Burke's study was to determine what specific reading skills led to better reading fluency rates in a special education setting. Burke designed two path models. The first model focused on phonological skills and phonemic awareness. The second model focused on letter naming ability and automatic word recognition. There were 289 participants in Burke's study. All of the participants were in special education, but spent most of their learning time in the general education classroom. The project was conducted over three years and students began in kindergarten with each model (Burke et al., 2009).

Students were measured in phonological awareness and phonemic segmentation. The researchers used the DIBELS program and TOWRE program to measure automatic word recognition skills. The results of the study indicated that phonemic segmentation and nonsense word fluency were not direct indicators of increased fluency rates (Burke et al., 2009). Predictions of reading fluency rate that used these models were not supported as hypothesized by Burke.

The researchers in the Burke study remarked that though neither path model was completely successful in predicting the fluency rates, it was possible that that was due to the fact that the assessments were not given on a continuum. This study established importance on specific skills (Burke et al., 2009).

Fluent readers were identified in a study conducted by Applegate, Applegate, and Modla. The researchers of this study hypothesized that notoriously strong and fluent readers who achieved at grade level in reading would also have scored well in reading comprehension

assessments. They decided, if the hypothesis was true, they could assume that they were successful in comprehension because of the successful skills they had in fluency (M. Applegate, A. Applegate, & Modla, 2009).

The purpose of the study was to determine if high reading rate caused high comprehension in readers. Applegate and others assessed text-based comprehension as well as inference and critical response. This method of measure was very similar to Ardoin's method of measure (Ardoin et al., 2008). Both teams of researchers used text-based assessments to score comprehension.

The students in Applegate's research study were also assessed in reading fluency in the areas of: oral reading, intonation, punctuation, and pacing. There were no corresponding results between the study done by Applegate (2009), and the study done by Rasinski (2009), though both researchers measured in the area of prosody. The population selected for the study was

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selected because they were strong and fluent readers (M. Applegate et al., 2009). Most of the participants scored proficient in comprehension. This judgment was not technically based on formative or summative assessment. However, the researchers found that over 66% of these readers scored at proficient or advanced readers in terms of comprehension. At that level, it left roughly 33% of these readers at below standard level in reading comprehension. Applegate remarked that more dynamic assessments were needed to determine areas of improvement. The readers who scored below standard created a cause for concern. Those students were selected because they were considered by their teachers as strong and proficient readers. Applegate suggested that that study was an example of why more dynamic testing was required in order to truly assess students' reading skills. Because of the 33% discrepancy, the researchers could not conclude that fluent readers were also highly skilled at

comprehending what they read (M. Applegate et al., 2009).

Reading programs that allowed teachers to focus on the structured needs of students had a significant impact on students (Iaquinta, 2006). In the research done by Iaquinta (2006), guided reading groups were identified as a method of best practice that addressed and met the challenges young readers faced when they learned to read. Guided reading instruction was associated with balanced literacy instruction (Iaquinta, 2006).

Guided reading was considered a practice that focused on specific reading skills, which included comprehension. Comprehensive Strategy Instruction (CSI) and its effectiveness was researched by Foley (2011). In the research study, Foley used teacher training and instruction as a component of the study. Unlike the Iaquinta research study (2006), Foley's investigation of teacher pedagogy and teaching self-efficacy was tied to the success and execution of

efficient reading comprehension instruction (Foley, 2011).

Two Measures of Reading Skills

The 1983 report, A Nation at Risk, released from the U.S. Department of Education, prompted educators to reform the way reading was taught and evaluated. An Ohio state K-12 Language Arts committee responded in 1986 to the national report, and developed a curricular framework for reading and writing competencies. The reading and writing framework was followed by the development of a performance-based assessment that evaluated the competencies and drove instruction. By 1988, a pilot version of the Developmental Reading Assessment (DRA) was approved and supported by the Ohio Department of Education as an assessment of reading skills for kindergarten through third grade students (Pearson Learning Group, 2003).

The DRA that eventually was designed by the Pearson Learning Group (PLG) assessed how well

students were reading texts. The DRA also monitored the reading growth and development of students, and provided teachers with reading information they used to tailor reading instruction (PLG, 2003). Reading fluency, comprehension, and accuracy were the three components assessed in the DRA. From its inception, the students' classroom teacher was considered the ideal administrator for the DRA because it rendered a conference-style approach that gave the teacher a connected account of the students' progress, as well as a familiar and relaxed setting for the student (2003).

The Northwest Evaluation Association (NWEA) created a computerized adaptive test to assess student learning, which was one of the first seen of its kind in education. In 1986, this adaptive test was given to Portland, Oregon, students. As technology developed, and the demand for student learning assessments that showed student growth over time established importance in high-stakes education, the

NWEA decided to refine the test in 1997. After three years, the NWEA released the new version of the computerized adaptive test, named Measures of Academic Progress (MAP). Over 17,000 students took the MAP test in 2000 (NWEA, 2012).

The MAP test was a unique test in education because of its adaptive component. When students answered a question correctly, the questions grew more difficult. When a student answered successfully in specific competency areas, the MAP test continued on to more difficult competencies. When a student answered unsuccessfully in specific competency areas, the MAP test adapted and gave students more questions based on lower competencies. The adaptation found in the MAP test reflected a more accurate assessment of student learning. By 2003, over 3 million students had taken the MAP test (2012).

The NWEA offered a MAP test for primary students which consisted of an assessment in reading and mathematics. Both of these assessments were

computerized, adaptive, and untimed. The Primary
reading MAP test assessed students in the areas of
word recognition, reading comprehension, knowledge of
text components, critical thinking, and reading for a
variety of purposes (NWEA, 2012).

Summary

Both the DRA and the Primary reading MAP test
were widely used, and commonly assessed at the time of
this study. However, these assessments varied in
significant ways, such as administration of the tests,
and the assessed components. The MAP test did not
test reading fluency in any way. One of the three
critical areas of assessment in the DRA was reading
fluency. In a school that used both of these
assessments as indicators of reading skills and
progress, educators asked if there was a correlation
between the fluency scores from the DRA and the scores
achieved on the MAP test.

CHAPTER 3

Methodology and Treatment of Data

Introduction

The researcher conducted a correlational research

study as defined by Gay, Mills, and Airasian. The

purpose of this study was to "determine whether, and

to what degree, a relationship existed between two or

more quantifiable variables" (Gay, Mills, & Airasian,

2006, p.191). The variables in this study were

student scores from the Developmental Reading

Assessment (DRA) and the reading Measure of Academic

Progress (MAP) assessment. Data was collected to

determine the type of relationship between student

assessment scores and reading fluency rates. The data

for the study was collected in September, 2011.

Methodology

Data was collected from student scores for this

quantitative research study from the DRA and MAP

tests. This correlational study, as defined by Gay,

Mills, and Airasian provided "...a numerical estimate

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of how related two variables are" (Gay, Mills, &

Airasian, 2006, p.192). The numerical scores from the

student assessments were correlated, and later

analyzed to determine the relationship.

Participants

In September, 2011, the researcher had 23

students in the homeroom class, and 9 students in the

reading class. A total of 32 students participated in

this study. The students were selected by a

convenience sample. The participants varied in

reading ability from kindergarten reading skills to

fourth grade reading skills. One student received

special education services for reading support. This

student also received speech and language support.

Another student was on a 504 plan for behavior

problems caused by Attention Deficit Hyperactivity

Disorder. Two other students were referred for

special education services later that year, in

November, 2011. Nine students also received bilingual

support services.

<u>Instruments</u>

There were two instruments used in this research study. The first instrument used was the DRA reading test. This assessment was given to the participants individually, by the researcher in September, 2011. The researcher used a timer to record the time it took each participant to read a passage from the DRA. The researcher also took a running record of this passage for each participant, and calculated the number of words read correctly per minute. The DRA had high stability in the school and district where the research was conducted. Not only was the DRA stable, it was established as a valid assessment designated by the school district to assess reading.

The second assessment, the reading MAP test, was given to participants in September, 2011, via computer. Each participant sat at an individual computer and proceeded through the reading MAP assessment with only brief verbal directions given by the researcher. The participants took the reading MAP

test independently and scores were calculated and delivered to the researcher by the Northwest Evaluation Association. The reading MAP test also had high stability in the school and district where the research was conducted. Not only was the reading MAP test stable, it was established as a valid assessment designated by the school district to assess reading.

Design

Data collected from the participants in this correlational research design was taken from the DRA and the reading MAP in September, 2011. The number of words read correctly per minute score was the data that was collected from the DRA. The data collected from the reading MAP test was the individual Rausch Unit (RIT) score of the participants. The DRA and MAP scores were correlated using Pearson-r that produced the coefficient for this study. The data was collected from each participant for both of the scores.

This correlational research design determined relationship, but did not determine cause. According to Gay, Mills, and Airasian, "The fact that there is a relationship between variables does not imply that one is the cause of the other. Correlations do not describe causal relationships. You cannot prove that one variable causes another with correlational data" (2006, p.204). Gay, Mills, and Airasian also stated that though correlational data did not prove causation, high correlation did allow prediction (2006).

Procedure

Participants read an on-level DRA text to the researcher while the researcher recorded a running record and timing of the passage. The researcher then calculated the number of words read correctly per minute in the passage indicated in the running record. The number of words read correctly per minute then became the established fluency score that was used for the correlational data study.

The participants in the study were then assessed using the reading MAP test in the school's computer lab. Each student took the test at an individual computer until completion. The researcher only gave brief directions to the participants as to how students should answer the test and enter their answer into the computer. Each individual participant reading MAP score was calculated through the NWEA and sent to the researcher for data analysis.

Once both scores for each student had been recorded, the researcher utilized descriptive statistic software to determine the relationship of the DRA and MAP scores.

Treatment of the Data

The researcher used the two scores from each participant to calculate a Pearson-r for the data. The Pearson-r produced a coefficient as a measure of the correlation between the DRA and MAP scores. The data was presented using a scatter plot as well the coefficient at a range four different levels of

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significance. The calculations were completed through use of StatPack software.

Summary

After the scores on both the DRA and reading MAP tests were collected from each participant in September, 2011, the data was then calculated for a Pearson-r coefficient. The Pearson-r coefficient indicated the relationship between the DRA and MAP test scores at different levels of significance. This data represented the statistical evidence of the type of relationship found between the DRA fluency scores and reading MAP test scores for the participants in the researcher's school.

CHAPTER 4

Analysis of the Data

Introduction

Two reading tests were used in the researcher's district to assess reading skills for second graders. One of the assessments, the Measurement of Academic Progress (MAP) test, was an untimed, computer-based test given in September, 2011. The other assessment, the Developmental Reading Assessment (DRA), was also given to second graders in the district in September, 2011. The DRA measured students' reading fluency, as well as reading comprehension and accuracy. The MAP and DRA tests were reliable and district-approved to assess reading skills; however, the correlation between the two tests had never been studied at this district.

The researcher collected data from 32 second grade students in the district who took both the MAP and DRA tests, then correlated the test scores. The researcher analyzed the test scores using a Pearson r

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correlation coefficient, as well as represented the findings in a scatter plot. Lastly, the researcher discussed the findings of the correlational research study.

Description of the Environment

The assessments used in this project were given in a two-week window, in September, 2011. Participants in this study were 32 second grade students from a community in Southeastern Washington. The participants consisted of 23 students from the researcher's classroom, and 9 additional students from researcher's reading class. All of the participants used an individual computer to take the reading MAP test. For the DRA test, participants were assessed individually by the researcher.

Hypothesis

Second graders demonstrated a significant positive correlation between their reading fluency rates and their MAP reading scores. More words read

correctly per minute by a student resulted in a higher
score on the reading MAP test.

Null Hypothesis

Second graders did not demonstrate a significant
positive correlation between reading fluency rate and
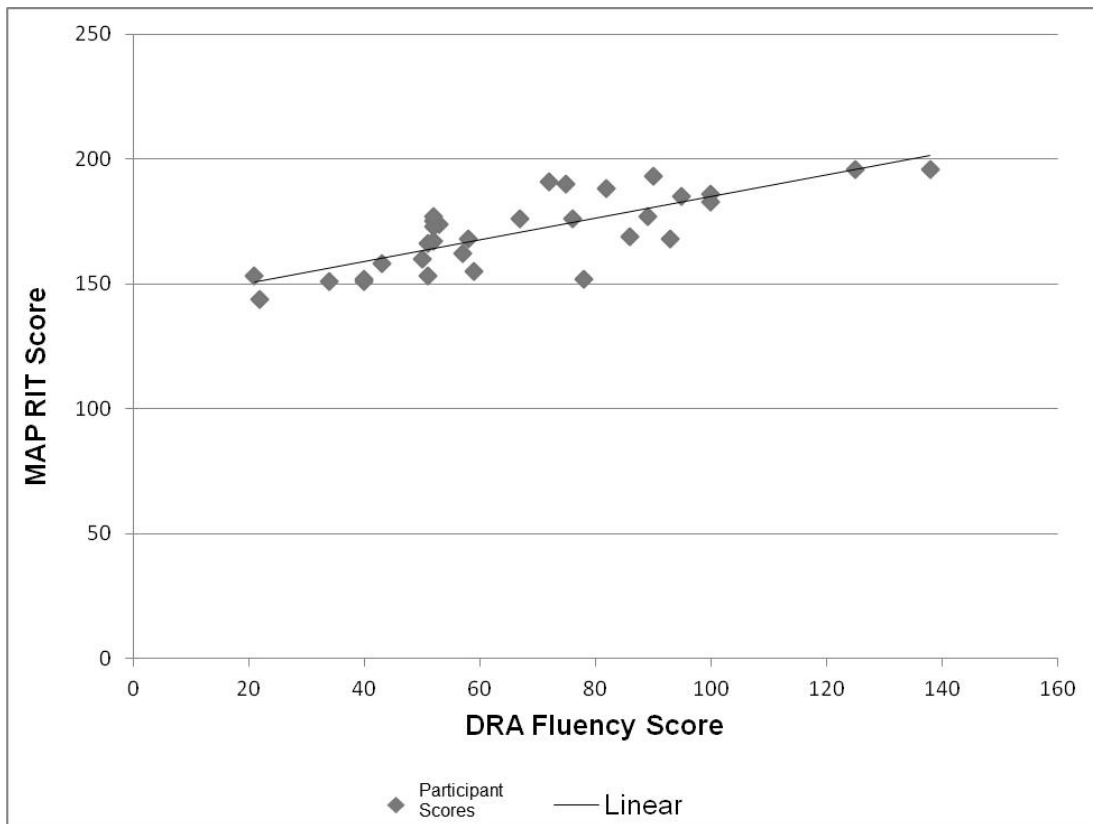the reading MAP test scores.

Results of the Study

The data that was obtained for this study
demonstrated a positive correlation between the MAP
and DRA tests when scores were plotted on a scatter
plot. The scatter plot included a MAP and DRA score
for each individual participant in the study. As shown
in Figure 1, the trend line for the data demonstrated
a positive correlation of MAP and DRA scores.

Descriptive statistical data was also used by the
researcher to determine the specific relationship and
the level of significance of the correlation. The
researcher utilized StatPak software to calculate a
Pearson r coefficient of 0.7838. The degrees of
freedom for this study was 30. The researcher found

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that the Pearson r correlational coefficient of 0.7838

was higher than the values at the 0.1, 0.05, 0.01, and

0.001 levels of significance.

Figure 1. Scatter Plot of DRA and MAP Scores.

Findings

The researcher found a significant positive

correlation between DRA reading fluency scores and

reading MAP scores of second grade participants in this study. Through analysis of the data, the null hypothesis was rejected and support for the hypothesis was found.

Discussion

The researcher expected a significant positive correlation between reading MAP scores and fluency rates in the DRA test. However, the correlation coefficient of 0.7838 was higher than anticipated by the researcher. According to Gay, Mills, and Airaisian, the coefficient of 0.7838 calculated in this study was high enough for group prediction purposes, but not high enough for individual prediction purposes (Gay, Mills & Airasian, 2006). Students in the researcher's classroom and reading class proved that, for those particular students, the more words read correctly per minute on the DRA, the higher the score was on their reading MAP test.

Summary

    Data from this correlational research study was plotted on a scatter plot to demonstrate the positive correlation between DRA and reading MAP scores for the participants in this study. Further statistical data analysis was conducted by the researcher that determined the level of significance of the positive correlation. The researcher found that the Pearson r correlational coefficient of 0.7838 was higher than the values at all four levels of significance. The high significance provided support for the hypothesis in this study.

CHAPTER 5

Summary, Conclusions and Recommendations

<u>Introduction</u>

The purpose of this project was to determine the
relationship of two assessments used by the
researcher's district. The data presented in this
project determined a significant positive correlation
between the scores of the reading Measurement of
Academic Progress (MAP) test and the Developmental
Reading Assessment (DRA) test for the participants in
the study.

<u>Summary</u>

There were two assessments used in the
researcher's school to assess reading skills; however,
knowledge of an existence of a correlational
relationship between these two assessments was unknown
in that district. Research was conducted that
explored the possibility of a relationship between
reading fluency and the success of young readers.
Evidence of a positive correlation was found by the

researcher in studies conducted to measure reading skills of young students.

The researcher designed a quantitative study that analyzed the data of 32 second grade participants in the researcher's school. The researcher collected reading fluency rates from the DRA test and scores from the reading MAP test. The data was then correlated and a Pearson r correlation coefficient of 0.7838 was calculated.

Conclusions

Similar to several of the studies researched for this study, the researcher found a positive correlation between reading fluency rates and scores on a comprehensive reading assessment. After the researcher analyzed the data, the researcher determined from the correlation coefficient, as well as the scatter plot, that a significant positive correlation between the DRA fluency rates and scores on the reading MAP test indeed existed. Support for

the hypothesis in this study was found and the null hypothesis was rejected.

Recommendations

The researcher found a significant positive correlation between the DRA scores and reading MAP scores in this study. Therefore, based on the conclusions, the researcher believes that if the study was replicated, a similar correlation would be found. The researcher believes that further data should be collected from another study of the relationship between these two reading assessments. However, the researcher would recommend increasing the number of participants in a future study to increase the validity of the hypothesis.

The researcher recommends that, in order to replicate this study, a careful consideration of the demographics of the participants must be taken into consideration. The researcher also believes that a powerful future correlational research study could be continued with the same participants using the same

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two assessments in third, fourth, and fifth grade. Individuals who wish to either continue or replicate the study are recommended by the researcher to closely follow the procedures of this study.

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