Correlation Between Student Reading Fluency Rates and Reading Level Achievement

---

A Special Project

Presented to

Dr. Gordon Martinen

Heritage University

In Partial Fulfillment

of the Requirement for the Degree of

Masters of Education

Steven M. Hannon

Summer 2008

Faculty Approval

Correlation Between Student

Reading Fluency Rates and

Reading Level Achievement

Approved for the Faculty

_____, Faculty Advisor

Abstract

The most important academic skill that a student can have is the ability to read effectively. Success in every other school subject is dependent upon reading. In addition the federal government has enacted legislation that can carry stiff penalties for schools that do not prove that they are adequately instructing children. In response to this situation schools must have accurate and reliable tools for measuring reading achievement. Two widely used tools are DIBELS and the STAR test, but are these tools accurate predictors of reading performance? In this study the researcher correlated DIBELS scores and STAR test scores and found that there was a high positive correlation between the two indicating that the two tools are accurate indicators of reading performance.

Permission to Store

I, Steven M. Hannon, do hereby irrevocably consent and Authorize Heritage University Library to file the attached Special Project entitled, Correlation Between Student Reading Fluency Rates and Reading Level Achievement, and make such paper available for the use, circulation, and/or reproduction by the Library. The paper may be used at Heritage University Library and all site locations.

I state at this time that the contents of this paper are my work and completely original unless properly attributed and /or used with permission.

I understand that after three years the paper will retired from the Heritage University Library. If I choose, it is my responsibility to retrieve the paper at that time. If the paper is not retrieved Heritage University may dispose of it.

_____ Steven M. Hannon

July 15, 2008

Table of Contents

Page

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

Introduction

Background for the Project

The standards based reform movement, kicked into high gear by the passage of the No Child Left Behind (NCLB) act, prompted school districts throughout the country to look at the ways that they were teaching and assessing core academic skills, particularly reading. Governor Christine Gregiore (2007) recently stated, “Reading is the window to learning”. If reading was the base that all other academic achievement was built upon then it was incumbent upon schools to identify the most accurate methods of determining and monitoring the reading achievement levels of their students.

President Bush emphasized the importance of reading in the NCLB by creating the Reading First program as part of the legislation. According to a press release from the White House dated September 10, 2001 this program provided $5 billion dollars in its first five years “…to help state and local districts to implement comprehensive reading instruction grounded in scientifically based research in kindergarten through third grade.” In fact it was during one of the promotional events for Reading First that President Bush learned about the 9-11 attacks.

Reading continued to be a point of emphasis for the state of Washington. In the summer of 2007 State Superintendent of Public Instruction Terry Bergeson,

joined by Governor Christine Gregiore, kicked off a summer reading program in order to encourage children to not only read in school, but to read on their own during the summer months. Said Bergeson (2007), “It’s a great time for kids to keep their reading skills sharp.” As part of that program local library systems offered incentives for kids such as free pizza and admission to Southwest Washington attractions.

Statement of the Problem

Many students have not met standard in reading on the Washington Assessment of Student Learning (WASL). To monitor student success schools needed to regularly test for reading competency. When students could not read at grade level they were at risk of not reaching their full academic potential thus limiting their chances of later success in life.

Purpose of the Study

The purpose of this study was to determine if there was a correlation between students’ reading fluency rates and their reading levels. Reading fluency rates were gauged by how many words per minute the students could read accurately. Reading levels were determined using the Standardized Test for the Assessment of Reading (STAR).

Delimitations

This project included 49 seventh grade students at Tumwater Middle School (TMS) located in Tumwater, Washington and was conducted in the fall of

the 2007-2008 school year. These students were part of two regular (not highly capable or gifted) language arts classes. Tools used for assessment were the DIBELS method for reading fluency and the STAR test to determine reading levels, both discussed in more detail later.

Assumptions

For the purpose of this study the following assumptions were made:

1. All students put forth their best efforts during the assessments.
2. The Standardized Test for the Assessment of Reading (STAR) was a valid test for evaluating reading levels.
3. The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) procedure was a valid method of determining reading fluency levels.

Hypothesis

Students that had high reading fluency rates would also score higher on reading level tests. Fluency rates were determined by correct words read per minute on a given passage. Reading levels were determined using the STAR reading test.

Null Hypothesis

High reading fluency rates would have no effect on achievement on reading level tests. Significance was determined for a Pearson *r* value of $\geq .05$.

Significance of the Project

The purpose of this project was to provide a factual base of information regarding how well students achieve in reading by comparing reading fluency rates and grade level reading assessment. If students had a higher reading fluency rate then they should achieve higher on the reading level test.

Procedure

For the purpose of this project, the following procedures were implemented: The researcher obtained permission to use the scores gathered from students in two language arts classes at Tumwater Middle School. These two classes were convenience selected by the researcher. In the third week of the 2007 school year the reading fluency levels were assessed using Curriculum Based Measurement Oral Reading Fluency methods (CBM ORF). Using this method each student was given a passage considered to be at grade level to read aloud to the test administrator for one minute. The test administrator tracked errors in the reading which included word omissions, substitutions, or hesitations lasting more than three seconds. Words self corrected within three seconds were not considered errors. The number of errors were counted and then subtracted from the total number of words read. This final number was the total Correct Words Per Minute (CWPM) or fluent reading rate.

Two weeks later the subject students were given the Standardized Test for the Assessment of Reading (STAR). In this test the students were given short

passages, from one short sentence up to two paragraphs in length. In these passages one word was omitted and from context the students were to decide on the correct word for the passage from a group of three choices. This test was self-leveling in that the passages became longer and more difficult as more correct answers were given and, conversely, the passages became easier if incorrect answers were given. In this manner a reading level was determined using twenty-five items given in a ten minute time span. Once these two procedures were completed the researcher compared the numbers using a Pearson *r* analysis.

Definition of Terms

For the purpose of this study, the following words were defined:

reading fluency. The rate at which a person accurately read. This was determined by timing a person reading a given passage and counting the number of errors that occurred during the reading. Subtracting the number of errors from the total number of words read gave the reading fluency rate.

Standardized Test for the Assessment of Reading (STAR). An assessment tool used to determine student reading levels. The test used a word insertion strategy (provide the missing word) to determine reading level.

Acronyms

ACT. American College Testing program.

AP. Advanced Placement.

CWPM. Correct Words Per Minute.

DIBELS. Dynamic Indicators of Basic Early Literacy Skills.

IEP. Individual Educational Plan.

EBD. Emotional and Behavioral Disorders.

NAEP. National Assessment of Educational Progress.

NCLB. No Child Left Behind.

SAT. Scholastic Aptitude Test

STAR. Standardized Test for the Assessment of Reading

WASL. Washington Assessment of Student Learning.

WPM. Words Per Minute.

CHAPTER 2

Review of Selected Literature

Introduction

With the passage of No Child Left Behind a tremendous amount of emphasis has been placed on student's ability to read. With the potential sanctions that were a part of this piece of federal legislation it has become extremely important for schools to be able to accurately track student achievement. The tools used for this were standardized tests, but did standardized tests actually help to improve learning? Even with all of the programs that schools had in place there were still some students that struggled because of issues that were beyond the control of the schools. This was where parents needed to help the schools by

providing adequate and effective support at home, especially in the area of acquiring early reading skills.

Reading Fluency

Reading fluency, or how quickly and accurately a person can read, has been linked to many other aspects of educational process. It has been generally shown that greater fluency rates lead to higher levels of comprehension of text read, higher levels of achievement on standardized tests, and even a reduction of inappropriate behaviors in students diagnosed with Emotional and Behavioral Disorders (EBD).

When students were able to read more quickly and accurately they were able to devote more of their brain capacity to actually understanding the meaning of the text (LaBerge and Samuels, 1974). Conversely those students that showed high levels of reading comprehension showed a tendency towards being able to read faster (Jenkins, Fuchs, van den Broek, & Deno, 2003). Vander Meer, Lentz and Stollar took these findings one step further and studied the correlation between reading fluency and achievement on state proficiency tests. They found that there was a high correlation between attaining the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) benchmarks and meeting standard on the Ohio Proficiency Test of Reading (2005). They found positive correlations between the .612 to .654 Pearson r value range, significant at the 0.01 probability

threshold. They also found that at the other end of the spectrum, low reading fluency and not meeting standard, the relationship remained true.

In their study Schilling, Carlisle, Scott, and Zeng (2007) decided to examine the correlation between DIBELS and various sub-categories of reading proficiency, thus breaking reading skills to their component parts to see if early findings held true at a more discreet level. Schilling et al. also investigated if the time lapse between DIBELS assessments (fall and winter) and the end of year administration of achievement tests invalidates DIBELS as a predictor of performance on the achievement test. The third issue Schilling et al. (2007) considered was whether or not the DIBELS benchmarks were an accurate means of identifying at-risk students. Schilling et al. (2007) found that DIBELS was indeed a valid predictor of future success on achievement tests, that the time lag between DIBELS assessments and administration did not significantly affect the validity of using DIBELS as a predictor of future success and that DIBELS scores did correlate with the various subsets of reading skills. The one area which had a weak correlation was that of word usage fluency, which was understandable considering the fact that DIBELS was not about improving vocabulary, but about increasing word recognition and decoding skills.

Standardized Testing

With the release of A Nation at Risk in 1983 and the subsequent passage of No Child Left Behind (NCLB) in 2001, with its possible repercussions to states

for not meeting its requirements, the need to prove that students were actually learning gained monumental importance. The tools that most states turned to in order to measure student learning were referred to as high-stakes tests. The title of high-stakes test indicated that the outcome of the test score greatly influenced the types of choices that a student may have depending upon that test score. Additionally, classroom teachers, schools, school districts, and states were judged based on these test results. The question that arose was, were these tests actually improving learning and was that learning being transferred to other testing situations and formats?

Amrein and Berliner (2002) and Greene, et. al. (2003) approached this question by taking a look at the high-stakes testing programs and compared test scores against four commonly taken nationwide achievement tests: the American College Testing (ACT) program, the Scholastic Achievement Test (SAT), the National Assessment of Educational Progress (NAEP), and the Advanced Placement (AP) exams.

Amrein and Berliner (2002) took test results from the 18 states that had the most severe consequences associated with scores from their state assessments. These consequences included such things as public disclosure of test scores at the school level in the form of report cards, take over of schools or replacement of staff by the state, student movement out of low performing schools, and monetary rewards for high performing schools, staff, and students. All of the sample states

used their assessment as part of the requirements for graduation and many of them used the test scores for determining grade level promotion. The assumption that Amrein and Berliner (2002) started with was that if the state tests were true indicators of student learning then as state test scores rose, so too would the test scores for that state's students on the national tests.

Amrein and Berliner (2002) concluded that for the most part high-stakes testing at the state level did not significantly increase student learning and the ability of students to transfer knowledge and skills to other testing situations and formats. While some states saw an initial increase in test scores these gains were generally modest and may have been a result of a change in participation rates. Many states that saw initial gains saw a decline in national test scores after a few years.

On the other hand Greene, et. al. (2003) found a fairly high correlation between score levels on high and low stakes tests. The highest levels of correlation were found in the state of Florida. The correlation between Florida's high stakes test (the FCAT) and the low stakes Stanford-9 standardized test for all subjects and grade levels was 0.96, a very high level of correlation. On the year-to-year score gains the correlation was 0.71, lower but still significant. These findings indicated that the FCAT test results were an accurate indicator of how well a student may have done on other standardized tests and the conclusion could be drawn that actual learning was taking place. Testing was found to be a

useful and valid method of determining the achievement of students and schools. If there was not a correlation found between the high stakes and low stakes tests then the blame generally fell on factors that were beyond the ability of the school to control or with the construct of the high stakes test.

There was no question that the current emphasis on standardized tests to show student achievement caused quite a bit of controversy, not only in the schools but also in the wider community. Many claimed that our students were over tested and this need to pass the test was actually hurting the overall education that each student received (Wolf, 2007). However tests served a very important and useful role in education and Patrick J. Wolf argued that "regular assessment of students serves critical educational and life-learning functions"(2007). Wolf (2007) contended that students benefited from even more testing than they were undergoing.

Wolf (2007) presented many compelling reasons as to why assessment was both beneficial and even necessary to the educational community. Testing provided educators and students a clear map as to what was important to teach and learn. Wolf stated "…that what gets measured gets done" (2007). In other words those skills and knowledge that were on a test were the same ones that would be taught and learned. Tests informed educators as to whether or not a program, be it an Individualized Educational Plan (IEP) or a school wide curriculum, was effective. Parents used test scores to keep track of their child's

academic success. Testing was used to identify academic weaknesses, hopefully at an early enough age to enable schools to implement effective appropriate interventions. Also test taking in and of itself was an important skill to have since many companies and institutions used various types of tests for many reasons, especially in hiring.

While many people felt that there were far too many tests given to students and that the emphasis placed on testing was over-stressing our students and limiting creativity and breadth of curriculum in the classrooms, testing served a vital role in education. An organization called Public Agenda took on the project of creating a series of attitude surveys in which they asked public school parents, students, teachers, principals, and superintendents about their ideas towards issues in education. The Reality Check 2006 report written by Jean Johnson, Ana Maria Arumi and Amber Ott found that the issue of educational standards and rigorous testing had become a less important issue to the general public and the educational community. While the need and support for standards and testing remained strong, many felt that there were other more pressing problems facing schools today.

Johnson, Arumi, and Ott (2006) asked questions of the participants about issues ranging from international competitiveness to homework. From the survey results they found that support for standards and testing remains quite high with 96% of parents responding that schools continue their efforts at raising standards.

In addition when asked if the amount of testing that their students undergo was appropriate 54% said that the amount was about right with another 10% saying that there should be even more testing. Also the majority of parents saw testing as necessary with 48% responding that not only were they necessary but they were also valuable, however 37% of parents characterized testing as a necessary evil. Surprisingly students' sentiments mirrored those of the parents. A large majority, 80%, of students responded that requiring them to meet high standards for graduation was a good idea. Also 79% of students believed that they should have to pass an exit exam in order to graduate high school.

Statistics gathered from teachers and administrators were also consistent with the views expressed by parents and students. A couple of exceptions were that school staff responded in higher percentages about students taking too many tests and fewer teachers saw the tests as valuable.

Continue with the trend towards higher standards and testing seemed to be the message that came out of the survey, but remember that there were other issues that needed to be addressed. The fact that standards and testing were not rated as the highest priority in this survey did not diminish their importance in education. The change in attitude may reflect the fact that the standards based movement had been around for a while and it was starting to reach some of its goals. Parents saw their children doing more difficult work than they did and

being held accountable through testing. It appeared that the community believed that the schools were on the right track in regards to standards and testing.

Testing was here to stay. There were many instances where there was no other convenient and effective tool for gathering the information that educators needed in order to make decisions about education. In addition the federal government mandated that states keep some kind of measure of student achievement, and as long as money flows from the federal government, they will get their tests.

No Child Left Behind

There was no disagreement that the No Child Left Behind (NCLB) act was the driving force that accelerated the standards based school reform movement. No Child Left Behind set very aggressive goals for student achievement, a requirement for highly qualified teachers to teach in every classroom, established the need for each state to develop rigorous achievement tests, made it necessary that schools showed gains in student achievement, and laid out consequences for those schools that did not make adequate gains. However, NCLB did not give schools the resources or strategies to truly meet all of the requirements that it put upon them. The act provided little in the way of funds for teacher recruitment and training, it did not set standards for aligning achievement tests with curriculum, and it was not concerned with growth made by students within the school year, but it was focused on the growth from year to

year of the same grade level, or comparing different groups against each other. It also did not address the role and importance of effective educational leadership in achieving goals.

One of the most important links in the education of a child was the teacher. The teachers were the people actually in the classroom instructing the children. It should have been fairly obvious that the best possible people were the ones that wanted to be teachers. The NCLB act required that the states provide highly qqualified teachers in every classroom. The act stated that states were to have these highly qualified teachers in place by the 2006 school year. In 2006 Darling-Hammond and Berry examined the state of the highly qualified teacher requirement of NCLB. A highly qualified teacher was defined as a teacher that has a bachelor's degree, full state certification and proven competency in the subject areas they taught. They found that good things happened and not-so-good things. On the good side Darling-Hammond and Berry (2006) noted that 33 states reported that at least 90% of their classes were being taught by highly qualified teachers, the number of teachers with emergency certification was dropping, and that many districts had implemented mentoring and other new teacher support programs.

On the not-so-good side of the issue Darling-Hammond and Berry (2006) found that there were still many states that had up to 30% of their teachers not meeting NCLB's definition of highly qualified. Also the teaching quality gap

between low income and high income schools continued to grow. On this latter point it was found that the fact that schools were rated as failing made it more difficult for them to recruit high quality teachers. The very rating system for identifying schools with problems and get them help made it more difficult for the schools to improve by hiring more highly qualified teachers.

One phenomenon that arose out of the need for highly qualified was the proliferation of alternative teacher certification programs. These programs let teachers earn their certification in a much shorter amount of time, subsequently states were able to label teachers as highly qualified even though they had much less preparation than teachers from traditional programs. Darling-Hammond and Berry (2006) cited studies that showed teachers coming out of traditional programs produce higher student achievement than those coming out of alternative programs. In addition teachers from alternative programs consistently reported that they felt unprepared for the realities of being a teacher. As the Federal laws were written a teacher could actually be labeled highly qualified by merely being enrolled in a teacher preparation program and yet not having attended a single class.

Another drawback to the highly qualified requirement was that many teachers, particularly in smaller rural districts taught multiple subjects. It was difficult for teachers to meet the highly qualified requirements for multiple subjects, especially if they were teaching more than two.

Darling-Hammond and Berry (2006) made several suggestions as to how to address the problem of getting highly qualified teachers into every classroom. The first was to offer more grant money to pay for new teacher development. Second they suggested starting teacher prep programs that developed teachers in a local area so the local population can staff its own schools. Third the federal government should fund new teacher support programs that helped teachers get through their first, and toughest, three years. Last they suggested standardizing teacher certification requirements nationwide making it easier for teachers to move from areas of the country with plenty of teachers to those areas that have a shortage.

Another problem that NCLB did not address was the fact that there may not have been alignment between what schools taught and the tests that they were being evaluated by. In addition, the current system of evaluating the effectiveness of schools was not necessarily accurate. Barton (2006) asserted that with the current system of administering achievement tests at the end of each year and then comparing scores between years, schools were not truly testing what gains students had made within that year. Also, using standardized tests as the instrument of evaluation was not a valid measure of achievement in that the standardized tests may not test the content that was taught.

Barton (2006) noted that the school accountability piece of NCLB was not a reliable method of sorting effective and ineffective schools because end of the

year achievement tests actually tested what a student had learned throughout his or her entire life. Some students had advantages or disadvantages depending upon what kind of life it was that they lived. In order to address this discrepancy Barton (2006) suggested that schools actually do two tests, at the beginning of the year and at the end of the year. In this manner the gain that students made throughout that particular year would be assessed. One of the problems that arose from the current system was that more advantaged school districts may have been able to hide low achieving schools because the student population was such that the students did well on standardized tests, however these same students may not have made any significant gains in knowledge and skills during the course of that particular school year.

Another issue that Barton (2006) addressed was the fact that school evaluation was measured from year-to-year and class-vs.-class. This opened up the possibility that some classes may have had more or less background knowledge and skills than another class. Students should not have been compared to students from other classes, but to themselves and the other students in their own class.

Parental Involvement

There was no question that parent involvement was an important factor in student success. However what form does parent involvement have to take? There were many levels of parent involvement and each student may have had his or her

own level of need in this regard. Involvement could have been as simple as making sure that the child had a time and place to study or as active as a parent working in classrooms. The key was to make sure that all parents were at least as involved as their student needed for success.

In order to determine parent perceptions Walker, et al. (2005) interviewed and surveyed over 1300 parents of public school students. Through the responses obtained from the interviews and surveys it was discovered that there were three main views towards who was primarily responsible for a child's education; the parents, the school, or it was viewed as a partnership between the parents and the school.

In a second phase of the study questions were asked in order to determine what the underlying motivating factors were for parents to become, or not become, directly involved in their child's education. The two variables involved in this part of the decision making process were parental view of what their role should be (parental role construction) and whether or not they can be effective in their role (parental self-efficacy). The parental view of their role in the educational process was important because it defined the range of activities that parents believed were important and necessary to be involved in. If a parent perceived that their own efforts at involvement were not effective then they were less likely to become involved.

A study conducted by Endya Stewart (2008) examined how different variables predict academic achievement. There were two types of variables investigated: individual and school structural. On the individual level were student effort, positive peer associations, and parental involvement. Student effort was defined as the level of school attachment, involvement and commitment shown by the students. This would include participating in extra-curricular activities and actual effort expended towards academic pursuits. Peer associations simply meant did the friends a student have influence attitude towards academics? On the parental involvement issue, the type of involvement and the frequency of involvement were explored.

Using data from the National Educational Longitudinal Study (NELS) Stewart (2008) analyzed how the above mentioned variables influenced academic achievement as measured by Grade Point Average (GPA). It was found by Stewart (2008) that the variables of student effort, positive peer associations, parental involvement, school climate, smaller school size, and non-urban school location all have a positive correlation on student achievement. On the other hand the variables of the presence of social problems, larger non-white student populations, and poverty all had negative affects on student achievement. Interestingly it was found with parent involvement that the most effective form of parent involvement was that which occurred at home. Parent involvement at the school had no significant impact on GPA for this group of 10^{th} graders. This may

be due to the maturity level of the students, and the fact that by 10th grade students were being encouraged to be more independent.

From the results of this study it could have been said that there needed to be efforts aimed at fostering high levels of effort on the part of students towards their own academic success. Peers had a great amount of influence over how well a student may perform. Parents needed to be involved in the education of their student, especially at home. Schools did play a vital role in influencing whether or not a student will be successful by creating a safe and positive environment. It also pointed out that there were many factors that were beyond the control of the schools that influence how well students succeed. Poverty was a clear area where something needed to be done. Also family structure restricted the ability of the parents to be supportive. This study pointed out that there were many ways to encourage students to be successful academically. The biggest problem being faced was how were educators going to address those issues that challenged students once they left the schools? One possible, and reasonably attainable, strategy was to get parents appropriately engaged in their students' education.

In another study that tried to determine what factors were involved in student achievement Haghighat (2005) investigated how social capital, possessed by the students, parents, and the schools, affected student achievement. Social capital refered to the fact that people lived in communities that were interconnected and how our social context affected our lives as much as did

wealth and access to resources. A person that possessed high social capital had strong relationships and a sense of connectedness to the community. What this meant in the educational community was that in settings where there was a high level of communication and trust between the schools, students, and parents there was an atmosphere that was more supportive of student achievement. Using data from the National Educational Longitudinal Study (NELS) Haghighat (2005) analyzed how the above mentioned variables influenced academic achievement as measured by standardized test scores in reading and mathematics.

Students were asked to identify what type and how much involvement was exhibited by their parents. Involvement could range from just discussing school program options to actually volunteering and being an active participant in parent organizations at the school. Parents, likewise, were asked about how involved they perceived themselves to be in their student's schooling, and about how they viewed the school climate. Most questions directed at teachers and school administrators dealt with student ability levels, school climate issues, and what types of activities that staff participated in to build relationships, thus increasing school social capital. In addition demographic data of school populations was collected.

It was found that the schools played an important role in both level of parent involvement and student achievement. These two variables intersect in that it was shown that schools that had greater outreach efforts had higher levels of

overall student achievement. However, it was also found that the schools that had greater outreach efforts were generally not schools that had a high minority student population. In addition while it was found that parent initiated involvement had a significant positive impact on student achievement, there were many instances when parents had to be invited by the school to participate in activities, thus underscoring the importance of school to home communication.

This study highlighted the importance of parental involvement as well as the important role schools played to create a positive environment for pupils to learn and parents to become involved. It was incumbent upon the schools to not only provide a safe and inclusive environment for the students, but this atmosphere must also be extended to include the parents. Schools have the responsibility to provide avenues for parents to build a connection with the school and the wider community, thus increasing the social capital available to each community member. Doing these things lead to higher student achievement.

A study by Ingram, Wolfe, and Lieberman (2007) investigated the critical elements of parent involvement as related to student academic achievement. Research has supported what would seem to be an obvious assumption, that parent involvement is positively correlated to student achievement. What was not so clear was just what kind of parent involvement was most effective. Parent involvement took many forms and parents were deeply involved in their child's education or they did not get involved at all. Ingram, Wolfe, and Lieberman

(2007) attempted to identify what type of parent involvement leads to higher student achievement. Once effective parent involvement strategies were identified, what could schools and teachers do to educate parents about these strategies and encourage their use?

Ingram, Wolfe, and Lieberman (2007) developed a survey that asked questions about six different aspects of parent involvement: parenting, communicating, volunteering, learning at home, decision making, and collaborating with the community. They surveyed parents at three high achieving at-risk schools in the Chicago Public Schools. At-risk schools were defined as schools that had a greater than 50% low income student population and greater than 50% minority students. High achieving meant that the schools scored in the top third of all Illinois schools on the Illinois Standards Achievement Test (ISAT).

This study highlighted the importance of parental involvement in their children's education and actually identified what and where parent involvement was most effective. Parents most benefited their students by providing them with the basics that they needed to feel safe and be healthy. Encouraging an appreciation of education by providing the supplies and a place for study can help. And finally parents engaged their children in intellectually enriching activities such as going to libraries and museums. Doing these things lead to higher student achievement.

Summary

Reading was the most important academic skill that a student needed, every other subject matter has some reading components to it. However, it was not only could you read, but could you read and comprehend? The faster and more accurately a child read then the more of the child's brain was devoted to comprehension and not to decoding. This in turn lead to higher achievement across the board. This achievement was measured using standardized tests, which were a requirement of NCLB. Standardized tests have caused controversy of their own. While some of the research findings were contradictory, it was clear that there needed to be a method of evaluating student achievement. The important thing to consider about testing was whether or not the tests were testing what was being taught. In order to assure the validity of the tests, careful alignment of the curriculum must take place. Also, in order to make sure that all students we being evaluated fairly perhaps it was time to develop a national curriculum and assessment. The researchers found that the most important things that parents could do to ensure that their child succeeds academically was to provide for their basic needs and also provide enriching experiences that emphasize the importance and value of education.

CHAPTER 3

Methodology and Treatment of the Data

Introduction

Since reading was such an integral part of being successful in any academic area it was extremely important that schools have valid and reliable tools for assessing reading achievement. Using multiple tools, that gave similar results, was one way that Tumwater Middle School assured that it was using appropriate reading strategies.

Methodology

This study was conducted as a correlational study of reading fluency rates and grade level achievement in reading. Fluency rates were determined by correct words read per minute on a given passage. Reading levels were determined using the STAR reading test. These scores were then subjected to a Pearson *r* analysis.

Participants

This project included 49 seventh grade students at Tumwater Middle School (TMS) located in Tumwater, Washington during the fall of the 2007-2008 school year. These students were part of two regular (not highly capable or gifted) language arts classes. Of these 49 students 44 were Caucasian, three were African-American, and two were Native-American. This racial breakdown was representative of the school population as a whole. There were nine students either receiving Special Education services or 504 accommodations. 21.7% of the students in the school were on the Free and Reduced Lunch Program. Gender breakdown was 22 males and 27 females.

Instruments

The two instruments used to gather data for this study were the Standardized Test for the Assessment of Reading (STAR) and the Dynamic Indicator of Basic Early Literacy Skills (DIBELS). The STAR test was a test developed by Renaissance Learning, Inc. designed to assess at what grade level a student was reading at. In this test the students were given short passages, from one short sentence up to two paragraphs in length. In these passages one word was omitted and from context the students were to decide on the correct word for the passage from a group of three choices. This test was self-leveling in that the passages became longer and more difficult as more correct answers were given and, conversely, the passages became easier if incorrect answers were given. In this manner a reading level was determined using twenty-five items given in a ten minute time span.

Dynamic Indicators of Early Literacy Skills (DIBELS) were a set of standardized, individually administered measures of early literacy development. They were designed to be short (one minute) fluency measures used to regularly monitor the development of pre-reading and early reading skills. Using this approach each student was given a passage considered to be at grade level to read aloud to the test administrator for one minute. The test administrator tracked errors in the reading which included word omissions, substitutions, or hesitations lasting more than three seconds. Words self corrected within three seconds were not considered errors. The number of errors were counted and then subtracted

from the total number of words read. This final number is the total Correct Words Per Minute (CWPM) or fluent reading rate.

Procedure

For the purpose of this project, the following procedures were implemented: The researcher obtained permission to use the scores gathered from students in two language arts classes at Tumwater Middle School. These two classes were convenience selected by the researcher. In the third week of the 2007 school year the reading fluency levels were assessed using Curriculum Based Measurement Oral Reading Fluency methods (CBM ORF). Using this method each student was given a passage considered to be at grade level to read aloud to the test administrator for one minute. The test administrator tracked errors in the reading which included word omissions, substitutions, or hesitations lasting more than three seconds. Words self corrected within three seconds were not considered errors. The number of errors were counted and then subtracted from the total number of words read. This final number is the total Correct Words Per Minute (CWPM) or fluent reading rate.

Two weeks later the subject students were given the Standardized Test for the Assessment of Reading (STAR). In this test the students were given short passages, from one short sentence up to two paragraphs in length. In these passages one word was omitted and from context the students were to decide on

the correct word for the passage from a group of three choices. This test was self-leveling in that the passages became longer and more difficult as more correct answers were given and, conversely, the passages became easier if incorrect answers were given. In this manner a reading level was determined using twenty-five items given in a ten minute time span. Once these two procedures were completed the researcher compared the numbers using a Pearson *r* analysis.

Treatment of Data

Using STATPAK software the researcher compared the students' reading fluency rates and grade level equivalencies in reading as measured by the STAR test by subjecting the data to a Pearson *r* analysis. The participants were analyzed in four groups. The first analysis was run for all students. Next the researcher created three sub-groups: girls, boys and students receiving special education or 504 accommodations.

Summary

In the fall of 2007 the researcher conducted a correlational study of reading fluency rates and reading grade level achievement. The study was conducted using two sets of seventh grade students in regular educational classrooms at Tumwater Middle School in Tumwater, Washington. The tools used to conduct the study were the DIBELS method for determining reading fluency rates and the STAR test for reading grade level achievement. The data were subjected to a Pearson *r* analysis. Results of the statistical analysis were

examined in four parts: a) the entire pool of participants, b) girls, c) boys, and d) all students receiving special education and 504 accommodations.

CHAPTER 4

Analysis of the Data

Introduction

Since reading is such an integral part of being successful in any academic area it is extremely important that schools have valid and reliable tools for assessing reading achievement. Using multiple tools, that gave similar results, was one way that Tumwater Middle School assured that it was using appropriate reading strategies.

Description of the Environment

This project included 49 seventh grade students at Tumwater Middle School (TMS) located in Tumwater, Washington. These students were part of two regular (not highly capable or gifted) language arts classes. Tools used for assessment were the DIBELS method for reading fluency and the STAR test to determine reading levels.

Hypothesis

Students that had high reading fluency rates would also score higher on reading level tests. Fluency rates were determined by correct words read per

minute on a given passage. Reading levels were determined using the STAR reading test.

Null Hypothesis

High reading fluency rates would have no effect on achievement on reading level tests. Significance was determined for a Pearson *r* value of $\geq .001$.

Results of the Study

The target reading fluency rate for seventh graders was a range of 160 to 170 correct words per minute (CWPM). Of the 49 students 19 were at or above this range. In addition another three students were within five CWPM of the grade level target. On the STAR test 28 of the students were reading at or above grade level, with an additional 12 within one year of grade level.

Figure 1 showed the reading fluency rates and reading achievement levels for all students in the study. There was a general trend towards higher achievement in reading level as fluency rates increased.

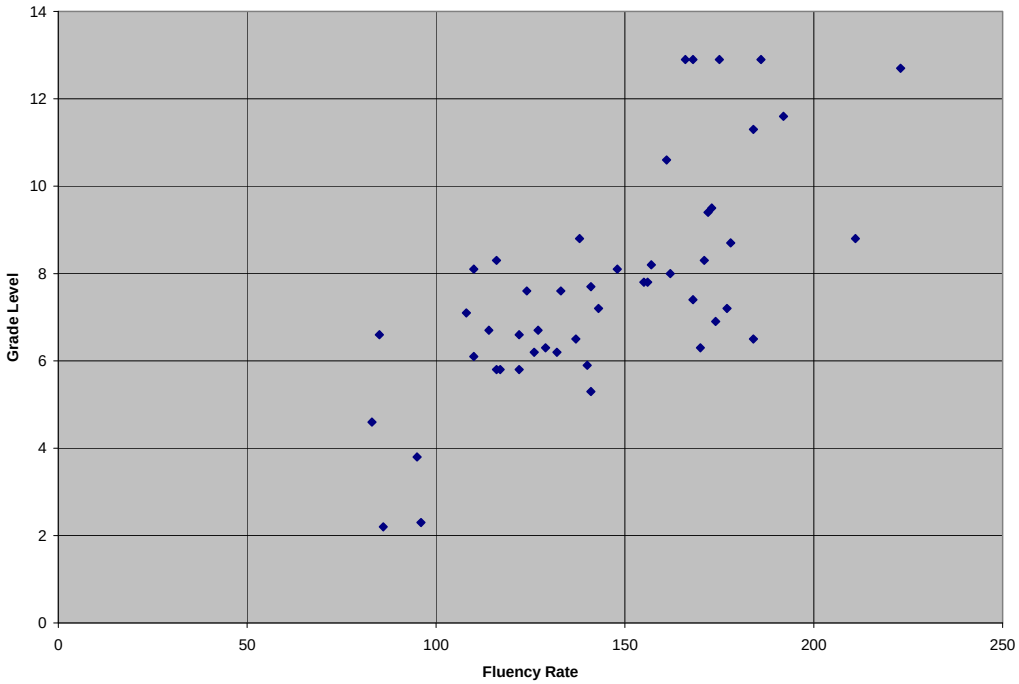

Figure 1: Reading Fluency Rates and Grade Level Achievement for all students.

Table 1

Table 1 Fluency Rates and STAR Grade Levels for girls.

Seventh grade girls' achievement in reading fluency rate and STAR reading level test. Grade level in reading fluency was 160 to 170 CWPM while the students should have been reading at the seventh grade level or above.

Student	Fluency Rate	STAR Grade Level
S-23	124	7.6
S-24	86	2.2
S-25	156	7.8
S-26	157	8.2
S-27	117	5.8
S-28	141	5.3
S-29	116	8.3
S-30	170	6.3
S-31	133	7.6
S-32	211	8.8
S-33	95	3.8
S-34	168	7.4
S-35	140	5.9
S-36	85	6.6
S-37	132	6.2
S-38	168	12.9
S-39	108	7.1
S-40	171	8.3
S-41	122	6.6
S-42	127	6.7
S-43	172	9.4
S-44	161	10.6
S-45	116	5.8
S-46	192	11.6
S-47	173	9.5
S-48	184	11.3
S-49	166	12.9
Average	144.1	7.7

Figure 2 showed the reading fluency rates and reading achievement levels for girls in the study. There was a general trend towards higher achievement in reading level as fluency rates increased.

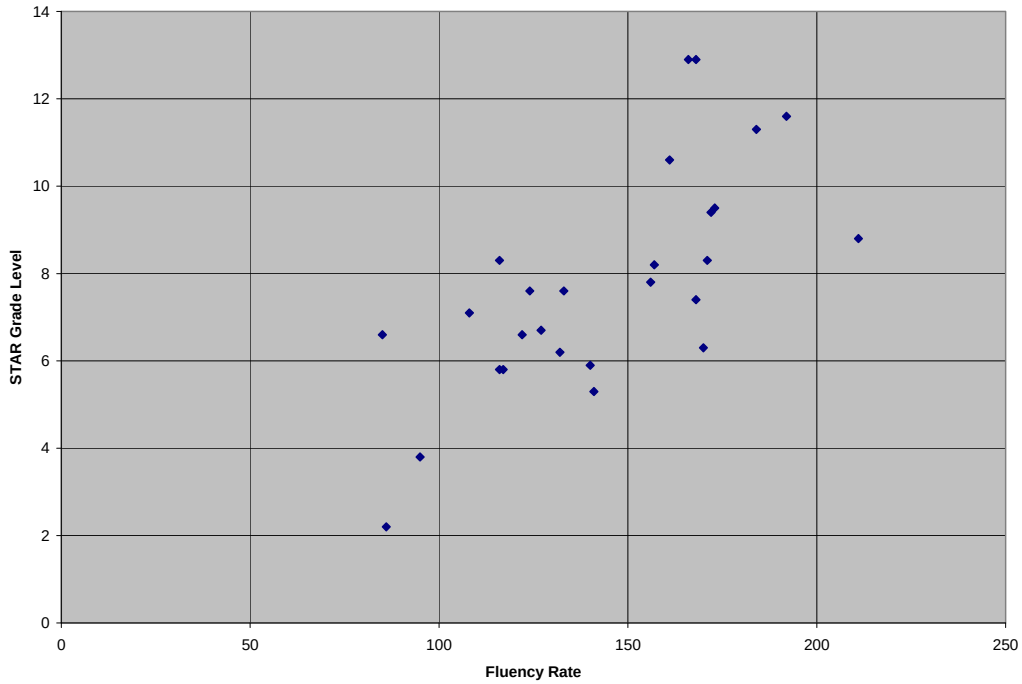

Figure 2: Fluency Rate and Grade Level Achievement for Girls.

Table 2

Fluency Rates and STAR Grade Level for Boys.

Seventh grade boys' achievement in reading fluency rate and STAR reading level test. Grade level in reading fluency is 160 to 170 CWPM while the students should have been reading at the seventh grade level or above.

Student	Fluency Rate	STAR Grade Level
S-1	175	12.9
S-2	223	12.7
S-3	186	12.9
S-4	83	4.6
S-5	141	7.7
S-6	143	7.2
S-7	138	8.8
S-8	148	8.1
S-9	162	8
S-10	122	5.8
S-11	184	6.5
S-12	174	6.9
S-13	178	8.7
S-14	114	6.7
S-15	137	6.5
S-16	129	6.3
S-17	177	7.2
S-18	110	6.1
S-19	126	6.2
S-20	96	2.3
S-21	155	7.8
S-22	110	8.1
Average	145.9	7.6

Figure 3 showed the reading fluency rates and reading achievement levels for boys in the study. There was a general trend towards higher achievement in reading level as fluency rates increased.

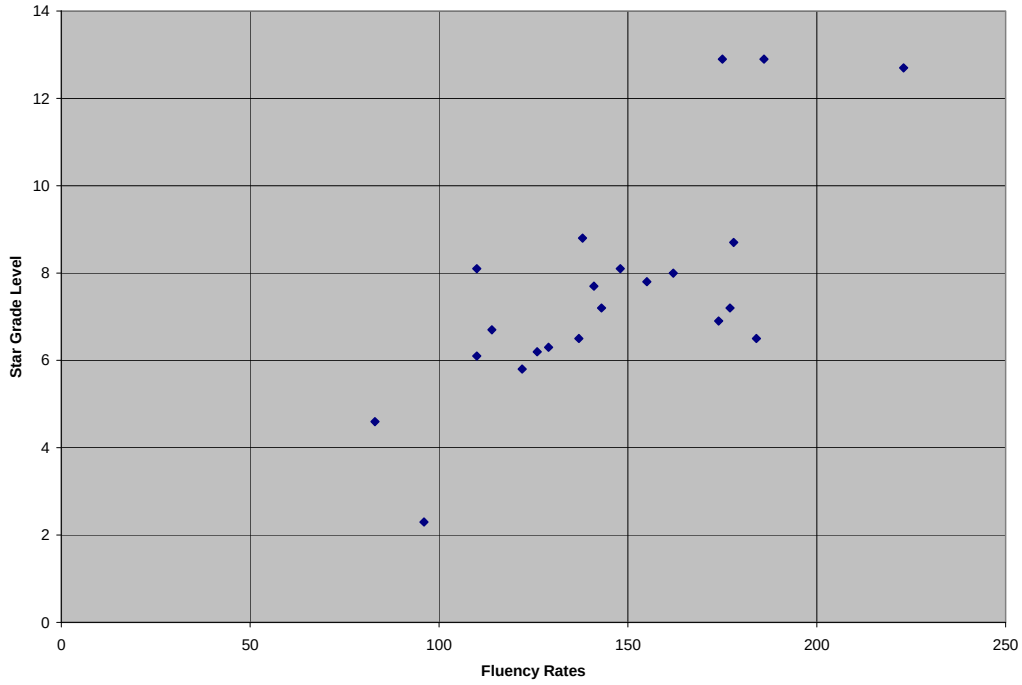

Figure 3: Reading Fluency Rates and Grade Level Achievement for Boys.

Table 3

Reading Fluency Rates and Grade Level Achievement for students receiving accommodations.

Students that received special education and 504 learning accommodations achievement in reading fluency rate and STAR reading level test. Grade level in reading fluency is 160 to 170 CWPM while the students should be reading at the seventh grade level or above.

Student	Fluency Rate	STAR Grade Level
S-24	86	2.2
S-33	95	3.8
S-36	85	6.6
S-3	186	12.9
S-4	83	4.6
S-45	116	5.8
S-9	162	8
S-46	192	11.6
S-11	184	6.5
S-13	178	8.7
S-18	110	6.1
S-20	96	2.3
Average	131	6.5

Figure 4 showed the reading fluency rates and reading achievement levels for students that received special education and 504 plan accommodations in the study. There was a general trend towards higher achievement in reading level as fluency rates increased.

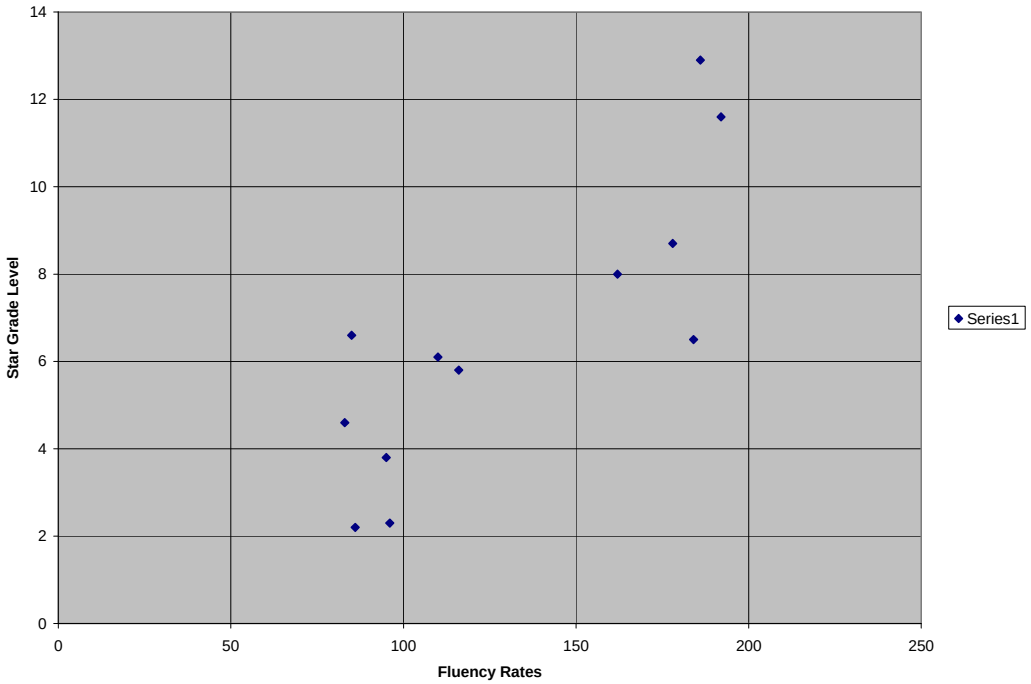

Figure 4: Reading Fluency Rates and Grade Level Achievement for Special Education and 504 plan students.

Pearson's product moment correlation calculations.

Formula:

$$r = \frac{\sum xy - \frac{(\sum x)(\sum y)}{N}}{\sqrt{\left(\sum x^2 - \frac{(\sum x)^2}{N}\right)\left(\sum y^2 - \frac{(\sum y)^2}{N}\right)}}$$

All Students

$$r = \frac{57322.1 - \frac{(7102)\,(378.5)}{49}}{\sqrt{\left[1081812 - \frac{50438404}{49}\right]\left[3228.33 - \frac{10422114.59}{49}\right]}}$$

r = .72

Girls

$$r = \frac{31869.6 - \frac{(3891)\,(210.5)}{27}}{\sqrt{\left[588699 - \frac{15139881}{27}\right]\left[1809.63 - \frac{44310.25}{27}\right]}}$$

r = .71

Boys

$$r = \frac{25862 - \frac{(311)\,(168)}{22}}{\sqrt{\left[493113 - \frac{10310521}{22}\right]\left[1418.70 - \frac{28224}{22}\right]}}$$

$$r = .74$$

Students Receiving Accommodations

$$r = \frac{11724.8 - \frac{(1573)(79.1)}{12}}{\sqrt{\left[228551 - \frac{2474329}{12}\right]\left[643.05 - \frac{6256.81}{12}\right]}}$$

$$r = .82$$

Findings

The researcher found that there was a positive significant correlation between reading fluency rates and reading grade level achievement as measured by the STAR test. All Pearson *r* calculations showed significance at the .001 probability threshold. Calculation for the entire group gave an *r* value of .72. For the subsets of boys and girls the *r* values were .74 and .71 respectively. The group that showed the highest correlation was that of the students receiving SPED and 504 accommodations with an *r* value of .82. The hypothesis of reading fluency rates and grade level reading achievement as measured by the STAR test was supported and the null hypothesis was rejected.

Discussion

Not surprisingly there was found a strong correlation between reading fluency rates and reading grade level achievement. Those students that were able to decode faster also seemed to be able to comprehend better. This supported the

theory that higher decoding skills left more of the brain available to make sense of the meanings of the words. These findings supported the findings of other research done on this topic.

Summary

Of the 49 students that participated in the study it was found that less than half read at what was considered grade level in fluency while well over half read within one year of grade level or above. Even with this seeming disparity it still held true that reading fluency was a predictor of reading level achievement. Boys had a slightly higher correlation than girls and students receiving some sort of accommodations showed the highest correlation. From the data, the null hypothesis was rejected and the hypothesis was supported.

CHAPTER 5

Summary, Conclusions, and Recommendations

Introduction

Reading was an integral part of any child's education. Schools needed to have reliable and accurate data in order to asses if their reading teaching strategies were effective. In this study two of these tools, DIBELS and the STAR test, were compared to find if they gave consistent feedback to educators in order to assess the efficacy of reading teaching strategies.

Summary

This study was undertaken in order to determine if reading fluency rates could be a predictor of achievement in reading. This study confirmed what had been found in many earlier studies, that reading fluency rates can be a predictor of reading achievement. In an educational setting that was becoming more focused on standards and achievement on standardized tests it was important that schools had tools that were valid and reliable. Since reading was one of the most fundamental academic skills-it was used in all other disciplines- then knowing the true reading abilities of students was of paramount importance to schools. The results of this study showed that by using a combination of reading fluency measurements and grade level achievement tests an accurate picture of students' reading ability could be obtained.

Conclusions

The researcher concluded that reading fluency was an accurate predictor of reading achievement. It can be seen on the figures provided in Chapter 4 that as fluency rates increased in general so did reading achievement levels. Surprisingly the correlation between the two measurements was most pronounced among students that were receiving some sort of academic accommodations.

Recommendations

Based on the outcome of this study the researcher recommends that schools use a variety of tools in assessing student achievement. While one test may be an indicator of achievement in a given area it is best to have more than

one score, obtained in a different manner, to obtain a true indication of what level students are performing at. In addition, with reading being a fundamental skill that will affect performance in every other discipline, special attention must be given to the teaching and measurement of it.

REFERENCES

Amrein, A.L. & Berliner, D.C. (2002, March 28). High stakes testing, uncertainty, and student learning. Retrieved January 23, 2008, from Education Policy Analysis Archives Web site: http://epaa.asu.edu/epaa/v10n18/.

Barton, Paul E. (2006).Needed: higher standards for accountability. *Educational Leadership*. *64, 3,* 28-31.

Darling-Hammond, Linda, & Berry, B (2006). Highly qualified teachers for all. *Educational Leadership*. *64, 3,* 14-20.

Driessen, G., Smit, F., & Sleegers, P. Parental involvement and educational achievement. *British Educational Research Journal, 31,* Retrieved April 4, 2008, from http://web.ebscohost.com.libdb.heritage.edu/ehost/pdf?vid=4&hid=12&sid=e3704a22-1f6e-4acc-9c03-cd533f7c2748%40sessionmgr2.

Greene, J.P. Ph.D., Winters, M. A., & Forster, G. Ph.D. Testing high stakes tests: can we believe the results of accountability tests. *Civic Report, 33,* Retrieved March 10, 2008, from http://www.manhatttan-institute.org/cgi-bin/apMI/print.cgi.

Haghighat, Elhum (2005).School social capital and pupils' academic performance. *International Studies in Sociology of Education*. *15 (3)*, 213-235.

Ingram, Melissa, Wolfe, Randi B., Lieberman, Joyce M. (2007). The role of parents in high achieving schools serving low-income, at-risk populations. *Education and Urban Society*. *39, (4)*, 479-497

Johnson, J., Arumi, A. M., & Ott, A. Is support for standards and testing fading. *Reality Check 2006*, Retrieved March 6, 2008, from http://www.publicagenda.org/research/research_reports_details.cfm?list=100.

Schilling, Stephen G., Carlisle, Joanne F., Scott, Sarah E., Zeng, Ji., (2007). Are fluency measures accurate predictors of reading achievement. *The Elementary School Journal, 107, 5*, Retrieved 10/17/2007, from http://www.journals.uchicago.edu/ESJ/journal/issues/v107n5/107502/107502.text.html

Stewart, Endya B. (2008).School structural characteristics, student effort, peer associations, and parent involvement. *Education and Urban Society*. *40, 2*, 179-204.

Vander Meer, Carolyn D., Lentz, F. Edward, Stollar, Stephanie. (2005). The relationship between oral reading fluency and Ohio proficiency testing in reading (Technical Report). Eugene, OR: University of Oregon.

Walker, Joan M. T., Wilkins, Andrew S., Dallaire, James R., Sandler, howard M., & Hoover-Dempsey, kathleen V. (2005). Parental involvement: model revision through scale development. *The Elementary School Journal*. *106 (2)*, 85-104.

Wolf, P.J. (2007).Academic improvement through regular assessment. *Peabody Journal of Education*. *82(4)*, 690-702. Retrieved February 26, 2008 from EBSCO Host : http://web.ebscohost.com.libdb.heritage.edu/ehost/detail?vid=5&hid=7&sid=b9679eb2-cd12-4cd0-8e41-d72174c2531c%40sessionmgr8

SUPPLEMENTAL REFERENCES

Clark, Amy A., Dorris, Amanda. (2006). Welcoming latino parents as partners. *Principal Leadership, 7, (3)*, 23-25.

Machen, Sandra M., Wilson, Janell D., Notar, Charles E. (2005). Parental involvement in the classroom. *Journal of Instructional Psychology, 32,(1),* 13-16.

Meltzer, Julie, Ziemba, Susan. (2006). Getting schoolwide literacy up and running. *Principal Leadership, 7, (1),* 21-26.

Onikama, Denise L., Hammond, Ormond W., Koki, Stan (1998). Family involvement in education: a synthesis of research for pacific educators. (Technical Report). Pacific Resources for Education and Learning.

Reis, Sally M., Fogarty, Elizabeth A. (2006). Savoring Reading Schoolwide. *Educational Leadership, 64, (2),* 32-35.

Spera, Christopher. (2005). A review of the relationship among parenting practices, parenting styles, and adolescent school achievement. *Educational Psychology Review, 17, (2),* 125-146.

Vacca, Richard T., (2006). They can because they think they can. *Educational Leadership, 63 (5),* 56-59.

Wallis, Claudia, Steptoe, Sonja, (5/24/2007). How to fix no child left behind. *Time, 6,* Retrieved 10/17/2007, from http://www.time.com/time/magazine/article/0,9171,1625192,00.html

Williams, Bronwyn T., (2007) Why Johnny can never, ever read: the perpetual literacy crisis and student identity. *Journal of Adolescent and Adult Literacy, 51, (2),* 178-182.