A CASE STUDY OF THE ANALYSIS OF FACTORS THAT OCCUR WITH READING PROFICIENCY IN ONE RURAL DISTRICT IN SOUTHEAST MISSOURI

A Dissertation

presented to

the Faculty of the Graduate School

at the University of Missouri-Columbia

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

---

by

Donald J. Moore

Dr. Ruth Ann Roberts, Dissertation Supervisor

December 2012

The undersigned, appointed by the Statewide Cooperative Ed.D. Program, have examined the dissertation entitled

A Case Study of the Analysis of Factors that Occur with Reading

Proficiency in one Rural District in Southeast Missouri

Presented by Donald J. Moore,

A candidate for the degree of doctor of education,

And hereby certify that, in their opinion, it is worthy of acceptance.

Professor Ruth Ann Roberts

Professor Paul Watkins

Professor Margaret Dalton

Professor Sharon Gunn

Professor David Stader

Acknowledgements

The author of the research would like to acknowledge individuals that have contributed to the completion of the study.

First, Dr. Ruth Ann Roberts was instrumental every step of the way in guidance and encouragement. She was top-notch as an instructor and advisor. Without her special tutelage this study would not have been successful.

Dr. Jerry Waddle encouraged the author to pursue a doctorate degree through the cohort avenue between the University of Missouri and Southeast Missouri State. He was also an excellent instructor in the program and was the initial professor that approved the topic of this study.

The instructors in the Educational Leadership and Policy Analysis (ELPA) program at the University of Missouri were excellent and the author learned much from them. Their professionalism and expertise was wonderful.

The media specialists at the rural school at which the author is employed provided valuable data that was used in the study. Without their time and effort in accessing and providing the data this study would not have been possible.

The elementary principal, Fara Jones, at the rural school was also instrumental in providing data that was used in the study and the study's success from that data is invaluable.

Finally, the author must acknowledge his wife for pressing him to complete the program. There were times when it seemed time to just give up, but she would not allow it. Special thanks goes to her.

TABLE OF CONTENTS

Chapter

CHAPTER 1

Introduction to the Study

Background

There has been a lot of criticism concerning the No Child Left Behind (NCLB) law: however, it is difficult to argue the goals of the legislation, only the practicality. It behooves us therefore to make NCLB something that is practical. In Missouri, school districts must participate in the Missouri Assessment Program (MAP) to determine if they meet the requirements of NCLB.

The MAP test is a rigorous test in communication arts and mathematics. Students take the test in the spring of each year and school districts receive the results the following fall. Initially this test was designed to be used in the annual performance report (APR) that schools received in the fall of each year. Depending on how students performed on the MAP helped determine if a district was designated as unaccredited, accredited, or accredited with distinction in performance. The MAP test was not designed to be used in determining national standards such as what NCLB incorporates.

In order to meet NCLB requirements, each school in the district must score at a proficient achievement level in the categories of mathematics and communication arts. When test results become available districts quickly check to see if students within the districts score at an advanced, proficient, basic, or below basic level. Schools within districts must meet the Adequate Yearly Progress (AYP) percentage of students scoring proficient or face sanctions that are both embarrassing and expensive to correct. Since the achievement level score is so important many administrators fail to realize that the test results also supply other valuable information such as the TerraNova National Percentile Score and the Lexile Measure, which

measures student reading ability and matches that ability to appropriate reading materials (Missouri Assessment Program Guide to Interpreting Results, 2009). The Lexile Measure in particular can help school districts determine if their specific reading practices are effective in improving student reading levels, which in turn can help districts make adjustments that can improve test scores. With a little effort it may also be used to examine identified student subgroups, as the MAP test does, to determine if there are other factors that affect student reading levels. Many educators are only concerned about whether students meet AYP (adequate yearly progress) but digging deeper into test results will require educators to change their mindset and put more time in examining all the information the test supplies, including the Lexile Measure. Educators may have a tendency to resist this mindset change, but if it can be demonstrated to educators that the time put into examining this measure will have positive outcomes in student reading levels, it may not be as hard a sell as one may anticipate.

With the introduction of high stakes testing public school districts are seriously examining individual and group performance levels. This study will identify factors that may show a relationship with student reading levels and use this information, in conjunction with Accelerated Reader's STAR Test, to determine if those factors contribute to student reading levels. There must, however, be a reliable avenue to predict throughout the school year how well identified groups will perform on the testing required through NCLB. One interest of this study is to examine the results of the third grade MAP test to see if there is a relationship between the MAP score and the mid-year STAR test score. Now before the reader concludes that the underlying interest of this study is only in scoring well on the MAP Test, let it be noted, as stated earlier, MAP Test results yield other information that goes beyond the general achievement level portion of the results and using this other information can be a tool that can be used to help

motivate students, staff, parents, and community members to take those tough but necessary steps that are needed to make all students quality readers. Marzano (2000) stated, "How state and district standards apply to local classroom learning, achievement and assessment is an issue which is of great importance to a myriad of educational officials" (p. 30). His contention is that districts should be setting standards that can be measured on a continuous basis to meet state standards as well as the local standards that have been established to meet those stated standards.

With the multitude of reading programs in existence it is astonishing to know that many schools have students who either are poor readers or cannot read at all (Burns, Griffen & Snow 1999). The problem for such students is that this burden will haunt them the rest of their lives in career choices and further education. One purpose of this research is to help educators identify through benchmark evaluation students who are having difficulties with reading comprehension, and who would be predicted to score poorly on the third grade Communication Arts section of the Missouri Assessment Program (MAP) since reading comprehension is a major portion of this test. Identification of these students before testing on the MAP should allow educators to intervene with strategies to improve reading comprehension and thus enable students the possibility to score well on the MAP while also accomplishing the primary goal of making the students better readers.

Conceptual Underpinnings of the Study

DuFour (2004) writes that assessments help monitor effectiveness of teaching and identify students who are experiencing difficulty. He contends that once students are identified, the school-wide system of intervention ensures that the students immediately receive additional time and support for learning. Other readings would advocate that the challenge for educators in testing situations is to make testing meaningful. As with Bridges and Hallinger (1997) who

describe problem based learning where meaningful experiences are advocated, schools must approach students concerning the importance of doing well on standardized testing. The meaning must be real, as imaginary meaning is transparent. Marzano (2000) writes that asking students to apply the knowledge periodically during the school year through benchmark testing gives teachers direction in knowing whether students are understanding the material and are taking the standards seriously.

Current practice in many districts seems to assume that students will naturally learn to read as they go through school. Wren (2004) writes that the myth that pervades education is that reading is a natural phenomenon; much like learning to talk is a natural phenomenon. Those students who get behind will catch up later. He claims that this myth must be overcome before all children can become proficient readers. It therefore makes perfect sense to take aggressive action in assuring success for those struggling in reading. There should be an avenue where administrators and teachers are able to identify and provide intervention for poor readers in order to bring them to a proficient level as measured on the MAP test.

The important benefit is to have no student at a level of a poor reader. The first step toward improving scores is to identify the students' reading levels through periodic common assessments (benchmarks). Then we can help bring them to a high ability-level in reading. DuFour (2004) writes that once students' reading levels are identified then teachers can truly focus on student learning as their primary mission, and use valid methods to access the extent and depth of learning. With the addition of NCLB, high stakes testing is putting a lot of pressure on school districts across the country to demonstrate that all students can, among other things, read at a proficient level. Polling data finds that the public generally views NCLB in a positive light, although there are a considerable percentage of people that are still undecided about the

benefits of the law (Gallup poll, 2004). Realizing that the public does view NCLB in this manner, school districts may be able to gain public support for more aggressive, rather than incremental efforts to improve scores on tests such as the MAP. This requires a change from past practices that were tied to the concept of the bell curve.

To make change in schools, we must first understand change. Fullan (2001) claims that if one does not understand change then change is not possible. Change is complex and simply doing your own thing, rather than researched and thoughtful planning, will not work. He contends that many leaders fail at change because of the large number of changes they try to implement. Too much change at one time is superficial and lacks the depth to really be successful. Sometimes change is mandated from one person, who thinks people will change according to that person's ideas. Fullan (2001) contends that change will not occur unless there is inclusion of all affected parties.

Fullan (2001) explains the implementation dip, also known as the "valley of despair". He indicates that there must be a reacculturation of the organization. This organizational change, as Fullan describes it, is very complex and should be dealt as part of the change process. If a person thinks that all change is the same and all one has to do is use a checklist, Fullan then contends that the change is doomed to fail.

DuFour (2004) is an advocate for benchmark testing, and he writes that the culture of an organization does not shift overnight or without conflict. He expands on the idea of change in public school districts by suggesting that teachers must work together within a district to collaboratively prepare common assessments. This is quite a change in the culture where teacher autonomy has been the norm. DuFour believes that teachers accumulate knowledge from one another as they interact in preparing the assessments and the intervention strategies that follow.

This knowledge building is important since no one teacher can be an expert in all areas. Knowledge building is an area that Fullan (2001) also identifies as an extremely essential element of change. Such professional development has the potential to improve classroom instruction of all teachers involved. This alteration in culture is very intriguing in its possibilities because of the amount of change in instruction and hence student success that can be accomplished by teacher interaction rather than teacher autonomy.

Fullan (2001) purports that if the organization wants to build knowledge it cannot depend on people going outside and bringing the knowledge back into the organization. The knowledge must be created and shared from within the district. He writes that organizations cannot send individuals to external training and then bring them back to unchanged environments and expect change. He contends that leaders should work on changing the environment to create a setting that is conducive to learning and sharing of that learning. Fullen claims that business does a much better job of changing the environment than education. In a business people may look to best practices of the co-workers around them to improve in needed areas. Expertise is shared up and down the line. In education it is quite different where many expect to go to external training (workshops) and bring what is learned back to an environment that may not welcome the new idea.

Fullan (2001) proposes that education must cultivate an environment of trust and sharing of knowledge that will self perpetuate and focus the institution toward constantly improving. He says that the exchange of knowledge happens only in a noncompetitive and/or collaborative culture. He therefore advocates to fix the culture and then get people to share knowledge, but he does say that if one starts with sharing knowledge first that may change the culture. Teacher professional development that addresses the recognition of poor readers through collaboratively

created grade and subject level assessments, and then provides intervention with proper strategies to remedy the deficiency, is compatible with Fullan's knowledge creation description.

In the book *The Five Dysfunctions of a Team*, Lenicioni (2002) identifies with Fullan the fact that an environment of trust is a key factor in a successful organization. She stressed that without trust there would not be the foundation for the other necessary components of a successful organization. She also identified conflict as a natural element of a successful organization, but that conflict without trust would not bring the desired results. If teachers are to collaboratively prepare common assessments and interventions, there must be that trust and willingness to have healthy conflict. Otherwise it will be business as usual and student achievement will stay at the bell curve model.

It is hoped that educators act immediately once students are identified as needing assistance. DuFour (2004) writes that when students are identified there should be immediate focus on intervention. Sometimes that requires a change in the way teachers think about teaching. In her research Hashweh (2003) found that in order for teachers to teach in the best manner possible, there must be a paradigm shift to look at research that shows what practices are most effective in the classroom. This enables teachers to tie the thought processes of teaching in with current research on desirable teaching methods. The environment for change allows teachers time to use the professional benefit of sharing and planning rather that autonomy. They can focus on the child in need and customize teaching strategies that will benefit student learning.

The publishers of the STAR reading assessment (2002), one tool currently utilized to gather information on student reading levels, claim that it can help in the testing arena. The first page contains the following:

> Renaissance Learning has developed this alignment to ensure that educators who are using the programs effectively will help children take charge of their own learning, as well as demonstrate what they have learned on state accountability reports. Renaissance Learning recognizes the impact that the standards-base reform movement and high-stakes standardized testing are having on schools and shares the concerns of educators and administrators that students perform well on high-stakes assessments. (Renaissance Learning, 2002, p. 1)

The question regarding the STAR test is whether it identifies weak areas in student reading levels accurately enough for educators to intervene the targeted deficiency. Provided it is effective in helping identify student reading levels, it would then allow districts to use the most effective teaching methods to rectify low levels of reading. However, DuFour and the authors that were cited on knowledge creation, tend to point toward the benefits of the local knowledge, thus district prepared assessments are preferred by them to ones purchased from a vendor. Marzano (2000) writes that a combination of common assessments may be the most beneficial:

> Use a variety of frequent assessment techniques as part of regular classroom instruction as well as externally developed traditional tests and performance tests administered to a sample of students at selected grade levels. The external assessments may be used to ensure that teachers' assessments are correct. These assessments also may be used to compare performance of students in the district to the performance of the students from the sample used to norm or develop the test. (Teacher Librarian, 2000, p. 32).

A common strand with all the authors is that frequent common assessments are critical in order to monitor student progress.

Problem Statement

Students are tested in the spring with the Missouri Assessment Program (MAP) tests. The results of the testing are not reported to districts until the following fall making intervention efforts difficult for those students already behind. There needs to be an avenue for identifying students who would do poorly on the communication arts section of the MAP, in particular the Lexile Measure in reading, and effective intervention provided to improve those reading skills on a continual basis. Many schools use the Accelerated Reader Program with STAR testing in their libraries to help identify the reading level of all students involved in the program. To be successful in the reading component Lexile Measure on the third grade communication arts MAP test students must be proficient at reading and reading comprehension, therefore, those that are sub-par readers are on track to score poorly on this section of the MAP. The STAR is the test given three times yearly in the Accelerated Reader program to measure student-reading levels. Once poor reading levels are identified, many districts rely on the Title I Reading Program to improve student reading levels in order to help them score at a proficient level on the reading section of third grade MAP. This study, therefore, will examine the relationship of third grade MAP scores, Accelerated Reader (STAR scores), and the general achievement level of different subgroups that take the third grade MAP test. STAR scores are currently being used in one southeast Missouri school district, but are not being analyzed for student success on MAP scores. Change is difficult to foster but if it can be demonstrated that STAR benchmarks show a relationship to student scores on the third grade Communication Arts MAP, then a larger change may be plausible in the future. A new learning culture may be able to develop local benchmark assessments that may be more reliable in identifying levels of learning and thus provide the ability to incorporate locally constructed interventions where needed.

Purpose of the Study

The purpose of this research is to help educators identify students who are having difficulties in reading comprehension through benchmark evaluation, and who would be predicted to score poorly on the third grade Communication Arts section of the Missouri Assessment Program (MAP). In order to score proficient on the MAP, according to the Missouri Department of Elementary and Secondary Education on its opening web page, students must show proficiency in thefollowing communication arts skills:

1. speaking and writing standard English (including grammar, usage, punctuation, spelling, capitalization
2. reading and evaluating fiction, poetry and drama
3. reading and evaluating nonfiction works and material (such as biographies, newspapers, technical manuals
4. writing formally (such as reports, narratives, essays) and informally (such as outlines, notes)
5. comprehending and evaluating the content and artistic aspects of oral and visual presentations (such as story-telling, debates, lectures, multi-media productions)
6. participating in formal and informal presentations and discussions of issues and ideas
7. identifying and evaluation relationships between language and culture

(http://dese.mo.gov/standards/comarts.html p.1) Without reading comprehension it would be very difficult if not impossible to score well on at least the first four listed components of the

communication arts test. At the third grade level the first three on the list are the content standards of the MAP test in communication arts. Students having difficulty in reading comprehension would be at severe risk of scoring poorly under those content standards. Intervention with identified students before testing on the MAP should enable students to score well on the reading section of the Communication Arts MAP test while also accomplishing the primary goal of making them better readers. One overall goal of this study is to determine whether the periodic assessments of the STAR, as used in the Accelerated Reader program during the school year, actually do identify poor readers.

Research Questions

Two overall questions for this study are whether the periodic assessments of the STAR as used in the Accelerated Reader program during the school year enable educators to effectively identify poor reading comprehension and whether certain subgroups of students tend to score at a consistent level as measured by the STAR and MAP test. Provided the answer to these questions are yes, then it behooves educators to analyze data periodically especially on certain subgroups, so that intervention can be provided where needed. Therefore, specific research questions are:

1. Is there a relationship between economic status as indicated by free and reduced lunch qualification and student reading scores as measured by STAR?
2. Is there a relationship between grade point average and student reading scores as measured by STAR?
3. Is there a relationship between student attendance and student reading scores as measured by STAR?
4. Is there a relationship between third grade communication arts MAP scores and student reading scores as measured by STAR?

Null Hypothesis

The following are the null hypotheses:

1. There is no relationship between economic status as indicated by free and reduced lunch qualification and student-reading scores as measured by STAR.
2. There is not a relationship between grade point average and student reading scores as measured by STAR.
3. There is not a relationship between student attendance and student reading scores as measured by STAR.
4. There is no relationship between third grade communication arts MAP scores and student reading scores as measured by STAR.

Limitations, Assumptions, and Design Controls

Limitations to the study may include the fact that one school district is used to provide data for the study. Another limitation of the study is that the researcher also is employed by the school district.

Summary

Early identification of students reading below grade level would enable educators to concentrate remedial efforts toward those students in order to cause improvement in their reading skills and thus increase the possibility that students score at proficient levels on the reading component of the Communication Arts MAP. Students who do not learn to read well in elementary school are much less likely to excel in their educational endeavors later (http://www.thosophy.ph/trans_34.htm#TheValueof Reading).

In summary, this research should be beneficial to determine if using the Accelerated Reader STAR scores show a positive relationship in the reading component of the third grade communication arts MAP test. The larger purpose of this study, however, would be to

demonstrate that if the minimal amount of benchmark testing and interventions show a positive relationship with reading scores then it may be palatable for educators to make some of the major changes needed in doing district constructed benchmark testing that can be utilized in all areas of learning. This research could therefore provide the springboard for the major changes needed to move toward district-wide benchmark testing. Continual monitoring of assessment data on a regular basis will probably require a change within the culture of this school. This change will not occur overnight but hopefully this research can get educators on board to start the journey.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

The advent of the No Child Left Behind (NCLB) legislation in the United States has caused many states and the schools therein to examine teaching processes in order to meet the new standards of the law. The law does have some lofty expectations, as well as stiff penalties for those schools that do not meet the new standards. NCLB not only requires schools to meet improvement targets for student populations as a whole, it also requires meeting those targets within subgroups inside the schools' student populations. Each subgroup must meet the target score or the school will be designated as "not met" for that particular group and will be required to meet the standard in the future.

The Missouri Department of Education (DESE) lists the subgroups and additional indicator categories on the Adequate Yearly Progress (AYP) reports to schools. The subgroups by race include Asian/Pacific Islander, Black, Hispanic, American Indian, White, and other. The subgroups by status include Free and Reduced Lunch (F/R) students, students with individual education plans (IEP), and students with limited English proficiency (LEP). In addition to test results a school can fall into the "not met" category if as a whole or any subgroup fails to meet the targeted attendance rate or graduation rate. A school that does not meet proficiency standards in any one of these areas will be declared to be in school improvement and over time receive state sanctions. It is therefore imperative that schools work diligently to prepare all students in every subgroup to consistently achieve at a proficient level on standardized tests. No longer can school districts blindly charge toward year-end standardized assessments with the hopes of

achieving at high-levels without ensuring that all students within each subgroup are ready to perform at an acceptable level.

The United States legislature when writing NCLB did not dictate the contents of the tests used, only what areas had to be assessed. It was left to the individual states to determine what should be in their tests and how rigorous to make these tests. Some states chose to use a basic skills approach in determining what should be proficient while others, Missouri being one of them, went for a high standards test that is very rigorous. Some argue that the federal government should have dictated what the contents of the test would be, but as Fowler (2008) illustrates, the procedure used by the legislature is common practice. Fowler states that because U.S. legislatures write vague laws, administrative agencies must fill in the details by developing rules, regulations, and policy guidelines. For example when S.B. 380 was made law in Missouri, the Department of Elementary and Secondary Education (DESE) developed the Show Me Standards in order to comply with the aspects of the law.

Afterward the Missouri Assessment Program (MAP) testing and other policy changes were enacted. To understand how the MAP test materialized to the type of assessment that it did, it is necessary to understand how administrative agencies operate. Administrative agencies such as DESE serve three different functions (Fowler, 2004):

1. Fill in gaps in the law that lawmakers either did not recognize or left to the experts working in government agencies.
2. Defining the key terms in a law or in the body of laws governing a specific domain.
3. Write rules that define their own internal procedures, including procedures for writing rules. (page 124)

In formulating rules, agencies usually follow a three-step procedure:

1. Gather information
2. Provide for public participation
3. Submit proposed rules to a designated individual or panel for approval. An example would be DESE submitting rule changes to the State Board of Education for approval.

Although administrative agencies often have considerable leeway in formulating rules, they must have the policy or rules approved by an entity external to the formulation process. To sum up, because all U.S. legislatures are overburdened with bills and other business, shifting detailed policy formulation to agencies such as the United States Department of Education and the State Departments of Education streamlines the legislative process, making it more efficient. The writing of rules for education policy is typically the responsibility of the State Departments of Education; often the State Board of Education formally adopts them.

The new consequential magnitude of high stakes standardized testing may have overshadowed to public officials and school leaders a completely different type of assessment, targeted regular classroom common assessment, which has shown to trigger remarkable gains in student achievement (Stiggins, 2004). These assessments are similar to a "physical exam, which provides the doctor and patient with timely information regarding the patient's well-being and can help with a prescription for an ailing person or assist a healthy person to become even stronger"
(http://www.whiteriver.wednet.edu/school/plc/powerpoint/commonformativeassessment.ppt). Today many schools rely solely on the results from standardized tests to assess student learning (Marzano, 2003). Schools use the results to make important instructional decisions, but if these tests are the only assessment tools used to monitor student achievement and make instructional

decisions, there will be little impact on student achievement. Stiggins writes that this type of testing (standardized only) has shown scant evidence of increased student achievement or provided the students more motivation to learn. These tests should rather be viewed as summative assessments that help determine whether students have met the intended standards. Summative assessments, however, can be compared more to an autopsy where useful information can be provided as to why the patient failed, but this information comes too late to change the patient's fate.

With the addition of NCLB, high stakes testing has put a lot of pressure on school districts across the country to prove that all students can, among other things, read at a proficient level. However in many states, as in Missouri, there already has been pressure to make sure students succeed, especially in reading. (http://dese.mo.gov/divimprove/nclb/QandA.html). Many districts are attempting to check the progress of their students by periodically benchmark testing, also referred to as common assessments, students to assess their attainment of important concepts in order to help them succeed on the state test. DuFour (2004) writes that common assessments help monitor effectiveness of teaching and identify students who are experiencing difficulty. These assessments help monitor student progress at a specified point in time in order to allow educators to help those that are not at an acceptable level. Through these uniform benchmark assessments, teachers can evaluate how well their students are doing relative to the selected standards in not only their classrooms but also other grade-level classrooms in the district (http://pubs.cde.ca.gov/ tcsII/ch2/comnbnchmrkassess.aspx).

The question could be asked as to why should districts be concerned about how students perform in the reading components of a standardized test given once a year. The answer should be that if the test is authentic and accurately portrays the child's reading ability, then a poor

reading score indicates more than a child performing less than proficient on a standardized test; it indicates that the child has a problem that will only cause him or her to experience future poor performance. Therefore, this writer contends that the emphasis on a strong reading program should be to identify reading levels of students and provide a pathway to continually improve reading levels.

An age old method of checking student reading ability is to have students read out loud. A student's performance when reading out loud, however, is not a reliable indicator of that student's reading ability. The student may be able to perfectly understand the text when reading silently but may stumble when trying to combine comprehension with word recognition and speaking ability in front of others. Therefore, as a method of assessment it is not authentic (http://www.nclrc.org/essentials/reading/assessread.htm, 2004). Many educators are using comprehension questions after a student has read a text to check understanding. These questions are made specific to the actual text and so happens to be the principle used with the STAR Reading test. Students using the STAR system exhibit significantly higher reading growth rates than those within control classrooms in a study (Nunnery, Ross, and McDonald, 2006). The Accelerated Reader Program (AR) uses the STAR test in its computerized information system to provide immediate diagnostic feedback on student reading levels. Nunnery, Ross and McDonald identify six principles of the AR program and are as follows:

> The first principle is that students need sufficient opportunities to practice reading to become better at it. The second principle is that the benefit of reading practice is optimized when that practice is at a high rate of success, which is defined as 85% correct and above on AR quizzes. Third students should read books matched to their ability, defined as their zone of proximal development. Practice that is too easy does little to

improve skills, and practice that is too hard leads to frustration. Fourth is regular feedback. Fifth is students should set personal goals and sixth is that teachers should provide personalized instruction based on the information received through AR and STAR.

With these principles incorporated it should allow teachers to identify students with good reading skills and those with poor. With this information teachers can intervene with targeted instruction. The AR Program and STAR test have shown success in improving scores on standardized tests, improving reading levels of all at-risk students including those in high poverty areas.

Once students have taken the dreaded once a year standardized test (MAP in Missouri) there must be a reliable way of gleaning student reading scores from the results. The most reliable avenue is to use the Lexile Analyzer to check student reading ability. This score is scaled from 200-2000 with 200 being lowest level. Lexile equivalent measures have been determined for more that one million students and continue to be reported on a wide array of achievement tests used across the nation (Daggett, 2003). Daggett contends that schools need to match students to instructional materials at their reading level and have an ongoing reading assessment system to measure students' continuous progress. This sounds very much like what the AR program does. By using the third grade MAP score, as if is heavily dependent on reading comprehension, it should be easy to check the accuracy and reliability of scores on the STAR.

As this writer has contended, using a reliable assessment system to identify reading levels is essential in helping students. While there are outside physical such as economic status factors that may be present with a reading problem equating a cause and effect with those factors will lead to inaccurate assumptions. Poverty many times exists with children who are poor readers. However, coming from a low-income family does not decrease a child's ability to read as other

factors that led to the economic condition also could contribute to reading ability of children. Lack of education of the parents or low IQ of the parents is an example of something that could cause poor economic status and poor reading (http:www.readingrockets.org/article/295). Poor student discipline can be a factor in learning to read, however, research seems to indicate that discipline problems within the classroom are a byproduct of ineffective instruction and classroom management (Bielefeldt, 1989). With a good reading program all children can succeed if students can get the targeted help that they need.

Consequently, one purpose of this study is to use a reliable predictor such as the STAR test to allow educators to reliably predict how students will achieve on the on the third grade MAP Test. The real value, however, to such a predictor variable is to identify areas that are demonstrated to be weak in student reading levels and intervene with strategies (intervention strategies) that enhance their reading skills. This will also increase the chances that students will score at a proficient level on the MAP. The review of related literature will incorporate four elements: (a) significance of No Child Left Behind, (b) significance of benchmark testing, (c) the types of benchmark tests, and (d) the culture shift required to think toward benchmarking.

Significance of No Child Left Behind

In January 2002, President Bush signed the "No Child Left Behind Act" (NCLB). It reauthorized the existing Elementary and Secondary Education Act (ESEA). NCLB made the most sweeping changes in federal law regarding public schools in nearly 40 years (http://dese.mo.gov/divimprove/nclb/QandA.html). It is based on the ambitious goal that all children will be proficient in communication arts and math by 2014. The basic premise that all children can become proficient in the skills taught in classrooms has its roots back in the late 1970s and early eighties where Effective Schools Research promoted the belief that all students

can learn the material required of them. That does not mean that all will learn everything within the classroom setting, only that all can learn the essential material that is required of them. In 1982 Ronald Edmonds said of the effective school: "It need not bring all students to identical levels of mastery, but it must bring an equal percentage of its highest and lowest social class to minimum mastery" (Lezotte & Bancroft, 1985, p. 23). Edmonds may have been more attuned to an essential skills type test with his remark rather than the NCLB where all students are required to attain to the same high level of mastery. Even though schools have until 2014 to reach the 100% plateau, they still must meet targeted yearly goals in order to prevent repercussions that can become quite severe in some cases. These targeted goals increase yearly up to the year 2014 where the 100% goal is required. This steady increase in the goals, called Adequate Yearly Progress (AYP), is a constant concern for schools, especially those with populations that traditionally have done poorly on standardized testing. This may be the most essential part of NCLB and probably the most complicated (http://dese.mo.gov/plannng/profile/apr/ayp100061.html). To meet the yearly AYP each school must achieve the goal of that year's target for proficiency (as defined by each state), which increases incrementally up to the year 2014.

Not only do schools have to meet the proficiency goals as a whole, they also must be met by the different subgroups within the schools. The different subgroups include Asian/Pacific Islander, Black, Hispanic, American Indian, White, Free/Reduced Lunch, Individual Education Plan (IEP), and Limited English Proficiency (LEP) (http://dese.mo.gov/plannng/profile/apr/ayp100061.html). Each subgroup listed is required to meet AYP goals, unless there are 30 or fewer students in a subgroup. There must be at least 50 students in the IEP and LEP subgroups for them to be accountable for AYP. No Child Left

Behind, therefore, requires educators to seriously address these subgroups within the school. Schools can no longer depend on a majority group to average out low scores of less successful subgroups. Districts now must address the reasons for low scores and the ethical issue of bringing all students to success no matter their cultural background. Bruffee (1999) stated that we must understand the community languages students speak and how that reinforces or interferes with the language educators are speaking. The different subgroups must be understood. In their article, Larson and Ovando (2001) point out the mistake that educators make when taking a "difference blind" approach toward ethnic differences in their classrooms. The authors interpret difference blindness as seeing no differences in ethnicities and therefore pretend that there are absolutely no differences in the cultures and how the students within the cultures learn. The authors write that what is actually happening is that educators are proceeding on as if there are no differences between races; all are just like white people so we are going to treat everyone just like they were white. Everyone is held to a white standard and taught in a way that is beneficial if one is white. The authors describe one school that was using "a difference-blind logic the school system effectively avoided public disclosure of its ineffectiveness with the education of minority students." (p. 71) The teachers in their role did not acknowledge the differences between ethnicities, thus refusing to examine the failed efforts to educate the minority students on the same level as white students. The excuse that everyone must be treated the same perpetuated failure for black students in this school system. With NCLB schools can no longer deny differences in how different subgroups might learn. Those areas of difference must be identified and addressed. Students must know the relevance of the test to them so they will perform to the best of their ability. In order to provide this relevance to students, it is critical to understand the diverse cultures that make up the subgroups (Flannery and Vanterpool, 1990).

There are a number of consequences that can befall a school that fails to meet AYP. On its web site, the Missouri Department of Elementary and Secondary Education (http://dese.mo.gov/plannng/profile/apr/ayp100061.html) explains the consequences as such:

> Any school that fails to achieve AYP for two consecutive years in the same subject area will be identified by the state as "needing improvement." Initially, a school that does not make AYP for two consecutive years must, if possible, offer students the opportunity to transfer to another, higher-performing school within the district. After a third year, schools must offer "supplemental services" (such as tutoring) for students. Schools that do not show adequate progress after five years may be forced to take tough "corrective action" such as replacing school personnel or extending the school year. The consequences for not meeting the yearly AYP goals provides a strong incentive for schools to work diligently to perform well on the standardized tests that are given each spring.

As was stated earlier in this chapter, NCLB is the most sweeping legislation that has occurred in public education in over 40 years. The pressure it has created on educators, however, is not all bad. With the pressure comes what Yukl (2002) would call a "sense of urgency" to change. If there must be changes in the way students in the United States are educated, then NCLB may be the mechanism to pressure such change. When changes in the environment are gradual, as they have been over the past 40 years, and there is not an obvious crisis, many people fail to recognize emerging threats (or opportunities) (Yukl).

The next sections of chapter two cover some changes that have shown promise around the country in meeting the NCLB goals. Bates (2005) wrote the following poem that presents a good illustration of the struggle educators have concerning No Child Left Behind:

A lot is being said these days about "No Child Left Behind"

Some words being used are not so kind

While others are hoping to find

The perfect solution

Am I so comfortable sitting on my cushion

This is someone else's problem to solve

So why should I become involved?

Oh, why am I so blind

I seem to find

The affirming Why can't value to insure no child is left behind (p. 1)

Significance of Benchmark Testing

Benchmark testing, also known as common assessment, has shown promise in identifying areas of strengths and weaknesses in student learning. These tests, given to all students within a grade level, help educators decide what the next step should be in the education process. Marzano (2003) advocates such tests at least every nine weeks. The common assessments should provide timely feedback on specific knowledge and skills for specific students. These tests allow educators to become aware of the incongruity of their desire for all students to learn and the lack of a strategy many times when they find those who have not mastered the desired learning objectives.

It is critical that these common assessments are developed to monitor student mastery of the essential outcomes and intervention strategies be developed to bridge the gap that has been identified (DuFour, 2004). Provided the common assessments are tied to the standards on the state standardized test, then they would give educators a snapshot of how students and subgroups

might perform on the standardized test, prior to testing, when intervention strategies can still be effective. This is one of the most important points in common assessments; identifying the areas of weakness in students and subgroups so that educators can provide interventions to help all individuals accomplish mastery of the essential material.

"If the student cannot demonstrate learning or achievement, the student has not failed---We have failed the student. Schools exist and teachers are hired for one reason only: to help students achieve" (Wong & Wong, 2001, p.197). Wong and Wong continue by claiming that if you do not correct or remediate, learning gets worse as the year progresses. That is why it is critical to remediate after the common assessments are graded so that students actually receive the needed intervention and improve as the year progresses toward the state mandated testing. Common assessments are a formative development tool that let teachers and students know how well the teacher is doing at teaching and how well the student and subgroups are doing at learning (Wong & Wong).

DuFour (2004) claims that monitoring student achievement on valid tests that assess students' mastery of essential learning skills can be a powerful tool in school improvement. He writes:

> Carefully analyzing timely assessment data can give individual teachers, teams of teachers, and entire schools greater insights regarding students' strengths and weaknesses. Such analysis can help teachers identify results-oriented goals that can enhance the school's effectiveness. While educators can (and often do) challenge the strategies and instruments used to assess student achievement, the idea that education should generate results is unassailable (p. 67).

Timely assessment and intervention is the foundation of a popular movement currently sweeping the nation. Response-to-Intervention (RTI) is based on timely assessment in order to determine what type if any intervention is needed for a particular student. Deno writes, "The fact that we cannot predict with certainty whether a particular program will be beneficial for a student, then, is the essential reason why ongoing progress monitoring is necessary" (http://www.rtinetwork.org). Deno further claims that this monitoring should focus less on describing differences between students and more on measuring their progress toward important educational outcomes. Under the RTI approach once a student has been identified through a general measurement to have a specific problem, the student is then given frequent, brief, repeated samplings to determine if the intervention strategies are performing as desired. Prasse (2008) states that for RTI to work effectively frequent progress monitoring of student outcomes is critical so that the measured outcomes can be use to adjust and change the interventions as necessary. Prasse further writes, "Delivering scientifically based interventions with integrity and monitoring (frequently) how the student responds to those interventions provides an invaluable data base of important information about the need to change or sustain the intervention in a timely fashion" (http://www.rtinetwork.org).

One critical aspect of RTI that would seem a necessity in any benchmark and intervention program is the need for teachers to all be committed to the success of the program. Kovaleski (2008) emphasizes that teams and team meetings are a vital part of creating improvements and designing the interventions that are necessary to improve student outcomes. He writes that teams should use a problem solving approach to analyze data from school-wide screenings to assist educators in planning and implementing instructional strategies that will differentiate on the basis of students' skill levels. Under this template teachers would review

benchmark data and plan strategies through quarterly benchmark meetings. The team would determine what percentages of students are at each performance level and plan strategies for each risk level. Fuchs writes, "The goal is to promote strong long-term outcomes for the greatest proportion of students, without wasting more intensive and expensive interventions on students who would develop well without them" (http://www.rtinetwork.org).

Monitoring students' level of achievement is not something that is foreign to Missouri school districts. School districts across the state are required to identify students in the third grade who cannot at the end of such grade read at the second grade reading level. Success in reading has been identified by the state of Missouri as an essential ingredient for the students of the state. Treleasee (2001) writes, "One can arguably state that reading is the single most important social factor in American life today. The knowledge of almost every subject in school flows from reading. Missouri schools are to periodically monitor student reading levels at the third grade and provide intervention strategies to bring them up to at least one grade level below the current grade by a certain time or the student must be retained (http://www.dese.state.mo.us/schoollaw/LegFolder/SB%20319sumhtm). But reading is more than just reading words. "Proficient reading depends on the ability to recognize words quickly and effortlessly. If word recognition is difficult, students use too much of their processing capacity to read individual words, which interferes with their ability to comprehend what is read (http://en.wikipedia.org/wiki/Reading_comprehension). Missouri's requirement of monitoring student reading progress and the ensuing intervention strategies are not much different than the common assessments being used by many districts across the country.

Stiggins (2004) writes that standardized testing definitely affects students.

The assertion is that standardized testing may be harmful to students because it blinds school leaders and the public to a more important and different application of assessment - the day-to-day classroom assessment. The strong day-to-day assessment in conjunction with standardized testing provides opportunities for educators to find out what is and is not being achieved by students and subgroups. If only standardized testing is done, there are lost opportunities, resulting in poor scores. Many then cry out about the injustice of the test, however it is not the test's fault. Stiggins claims that high-stakes tests without supportive classroom assessment environments harm struggling students. While this author more strongly endorses assessments as they occur on the day-to-day variety, the concept of periodic testing to find out what is being achieved ties in well with common assessments.

In order for common assessments to be effective and have the significance that will set them up as a successful tool educators can confidently embrace, the results of the assessments must be thoroughly examined so that teachers can monitor the effectiveness of their teaching and identify individual students who are experiencing difficulty (DuFour, 2004). Once the students are identified, the intervention strategies of more time and support for learning can be implemented. But that all is assuming that the assessment data has been thoroughly examined, analyzed and understood. One area of assessment often overlooked is the Lexile score, but it is one that can yield accurate and reliable information about a child's reading ability. Sausner (2005) writes:

> The high stakes of failing to make adequate yearly progress means two things: educators can't wait until the end of the year to gauge how they're doing, and they have to be sure that what they're teaching day-to-day equates to what will be required of their students on

the state's summative test. Integral to this is the reality that teachers still struggle to match up what they're doing in the classroom to what's being evaluated on state tests.

Martin (2006) writes that to successfully use common assessments, teachers must be clear about what the state, district, and individual school desire for their students to learn. Martin also indicates that teachers that are successful in using common assessments should not look at these assessments as grading the teacher; however, they should be seen as indicators of the need to change methodology and techniques of teaching so that all students and subgroups can master the required material.

Furger (2005) acknowledges that high stakes testing has an incredible influence on classroom practices. Many teachers feel that it forces them to concentrate too much on what is being tested to the detriment of other areas that a teacher may want to teach. However, this may be the sort of motivation individuals need to point them in a healthier direction for student learning to improve (Martin, 2006). This may be that sense of urgency needed to prepare teachers for the anxiety, challenges, and overall stress that come when overhauling a system.

Types of Benchmark Tests

There are generally two different types of common assessments schools give to students. Marzano (2003) writes that schools basically rely on a school-constructed series of quarterfinal tests that are specifically designed to assess student competence in essential school-identified content, or they rely on companies that specialize in test design. Dufour (2004) is adamant that the professionals within the school should design common assessments. He writes that there are three questions that must be answered when looking at assessments and only those within the school can answer them. DuFour's first question is: "What do we want each student to learn?" (p. 8). His premise is that no outside testing agency can know as well as the school itself how to

answer that question. DuFour's second question is: "How will we know when each student has learned it?" (p.8) The emphasis is on the teachers knowing when students have learned, not when an outside company tells them when students have learned. His final question is: "How will we respond when a student experiences difficulty in learning? (p.8).

After the above questions have been answered a team of teachers develops the common formative assessments to monitor each student's mastery of the essential outcomes (DuFour, 2004). DuFour suggests that teams get together to establish what is important and what is the best way to test each skill. They also set the standard for each skill or concept that each student must achieve to be deemed proficient. Marzano (2002) writes that benchmarks should be written at all grade levels. Students that do not score at the proficient level should be given timely intervention. Martin (2006) suggests that the district make sure that the curriculum is aligned both within and across grade levels with a particular state's standards. This ensures that what will be taught is what is intended in order to perform well on the standardized test. Otherwise much frustration will ensue due to meeting common assessment goals while still performing poorly on the standardized test.

Outside testing companies offer quality data as well prior to standardized testing so that teachers can know how students are performing. An advertisement by a company called StandardsMaster claims to identify student weakness well before the high-stakes test so that intervention can be provided. Sausner (2005) writes of one company, Thinklink Inc.'s Predictive Assessment Series where students take a computer-base predictive version of a state assessment test three times a school year. This test supposedly gives data back to the teacher, which reflects a student's strengths and weaknesses as they pertain to the state standardized test. The test immediately rates the child's performance as red, indicating serious deficits, yellow indicating progress toward the

states goals on the standardized test, and green signaling mastery, which would allow the teacher to move on with this student.

The two types of common assessments (district constructed and outside company constructed) offer similar results, but can either deliver on the promise of helping educators identify strengths and weaknesses in student test readiness? This study will attempt to answer one aspect of that by examining one test from an outside testing agency.

The Paradigm Shift Associated with Common Assessments

There is no question that No Child Left Behind has caused educators to wonder how to go about making 100% of the students within schools proficient in the required areas. It is safe to say that at no time in this nation's educational history has there been a call for all students to be proficient in any area. DuFour (2004) challenges educators to look to a culture shift toward a new way of thinking about education. Education should get its focus away from teaching and concentrate more on learning. DuFour (1997) writes, "One of the most evident commonalities (in a school with a shift in focus) is that the staff in each school is emphatic about and fixated on the fundamental purpose of the school –high levels of learning for all students" (p. 82).

Establishing learning focused schools takes educators to the true source for making sustained student achievement (DuFour, 1997). That concept is the learning community. In short the learning community focuses on learning rather than teaching; professionals work collaboratively, and each holds himself/herself accountable for results (DuFour, 2004). Focusing on learning ensures that students do learn. That is where the common assessments come into play. They are developed collaboratively among the teaching staff and help identify areas of learning that students are not proficient. Collaboration is difficult in today's schools and a concentrated effort will have to be made to break away from the individualism that prevails.

DuFour emphasizes focusing on results. The only way to know what students are learning is to see the results and take appropriate actions when necessary to ensure learning is where it should be.

When tracking students though the school year it would be helpful to know if there are certain populations or subgroups that may show a propensity to score poorly in reading comprehension. Once identified those groups could be closely monitored for improvement. One factor that could be analyzed is socioeconomic status and its relationship to academic achievement. While it was noted earlier in this chapter that socioeconomic status in and of itself may not cause a student to be a poor reader it would be well advised to examine to see if there is a positive relationship between economic status and reading comprehension. At a conference of 23 nations in 1999, if the United States had been represented only by its school districts with low-level poverty, the United States would have ranked second out of the 23 nations that were involved. Conversely, if the United States would have been represented by high-poverty districts we would have ranked only above Nigeria and Swaziland (Thomas & Stockton, 2003). Thomas and Stockton also site a statistic in 2001 on the Stanford Achievement test that indicated that the greater the concentration of poverty in school districts, the lower the student achievement. Socioeconomic status should therefore be a factor to monitor when trying to identify and improve reading levels.

Thomas and Stockton (2003) site the 1998 NAEP reading scores that revealed that females outperformed males in reading achievement. They contend that girls as a group show more positive attitudes than boys at all grade levels toward reading. The gender factor, therefore, should be another factor when monitoring reading progress of subgroups.

Another factor that may help identify students at risk of poor achievement is student absenteeism. Roby (2003) notes that student achievement is affected in a negative way by absenteeism. He claims that poor attendance rates in school buildings was one of the factors leading to student test scores being much lower than their classmates. Roby cites Barrington and Hendricks (1989) who suggest that student attendance should be charted and monitored weekly since high attendance rates are indicators of effective schools.

While studies are difficult to obtain that may indicate a relationship between discipline and student achievement, there are many studies on classroom discipline. It is as if it is understood that without proper classroom management student achievement will be affected. Articles tend to show that discipline is a byproduct of effective instruction (Bielefeldt, 1989). Monitoring student discipline may show where ineffective teachers are and why academic achievement is low. Bielefeldt claims that effective teachers are characterized by the ability to anticipate, organize, and maintain the flow of classroom events. Monitoring discipline incidents may help identify poor teachers as well as help administrators place students under the teacher best suited to meet their academic needs.

Summary

The literature lays out the need for doing well on standardized testing as it relates to No Child Left Behind. With the ever increasing percentages needed to meet AYP each year it is imperative that schools know their students' and subgroups' readiness to take the test, but more importantly it is critical that schools be able to offer timely interventions at a point when students and subgroups can overcome learning deficiencies such as reading. It was pointed out in this review that the RTI program depends heavily on assessment data to determine the level of student performance and the strategies that may be effective in intervening. The way to

determine the deficiencies is through quality common assessments. Two different types of common assessments were presented within this review. Those were school constructed assessments and assessments prepared by outside testing agencies. While assessments prepared by outside testing agencies may be an easier sell to overworked staff members, school constructed assessments may be more specific to the particular needs of the students within the school. The success of assessments from outside testing agencies such as AR with the STAR test may help open the door to encourage staff members to buy into the need to dedicate themselves to developing school constructed assessments in the future. It was also noted that there may be certain subgroups that may be monitored.

CHAPTER 3

Methods

Purpose of the Study

One overall purpose for this study is to determine whether the periodic assessments of the STAR, as used in the Accelerated Reader program during the school year, enable educators to effectively identify students needing help with reading in third grade. Once identified, do school intervention strategies improve reading ability? Provided the STAR Test can identify students who read poorly, it then behooves educators to determine if the intervention is effective. General questions are: 1) Does the STAR Test identify poor readers? 2) Are there factors that can help identify the risk of being a poor reader?

Research Questions

The overall question considered in this study is whether periodic assessments during the school year enable educators to more effectively identify specific areas where students are performing below the desired reading level thus allowing intervention strategies to be customized for the student. Incorporation of remediation should bring students to a proficient reading level as measured on the MAP test. Providing there is a relationship, it then behooves educators to pay close attention to these scores and bring them to a level comparable to grades when notifying parents of reading progress. Specific research questions are:

1. Is there a relationship between economic status as indicated by free or reduced lunch eligibility and student reading scores as measured by STAR?
2. Is there a relationship between grade point average and student reading scores as measured by STAR?

3. Is there a relationship between student attendance and student reading scores as measured by STAR?
4. Is there a relationship between third grade communication arts MAP scores and student reading scores as measured by STAR?

Null Hypothesis

The following are the null hypotheses:

1. There is not a relationship between economic status as indicated by free or reduced lunch eligibility and student reading scores as measured by STAR.
2. There is not a relationship between grade point average and student reading scores as measured by STAR.
3. There is not a relationship between student attendance and student reading scores as measured by STAR.
4. There is not a relationship between third grade communication arts MAP scores and student reading scores as measured by STAR.

Methodology

The methodology used for research questions 1through 4 was quantitative using a correlation research design. Pearson's Correlation was used after all data had been entered into the SPSS program. Third grade student STAR scores and third grade communication arts MAP scores for two school years were obtained from one school district in Southeast Missouri. The first and second of three STAR scores are accomplished by students before they take the MAP communication arts test required by the state of Missouri. In addition student grades, attendance, and economic status of students was obtained for the same two-year period. A statistical correlation analysis between the second set of STAR scores, attendance, grades, economic status

and MAP scores was used to answer the research questions. The STAR Test scores, MAP scores, grades, economic status, and attendance from the district involved in the research constitute the variables. Pearson's Correlation will enable the researcher to answer the research questions as to how each variable is related.

Rationale for Methodology

The rationale for using this methodology for the research questions was based on the need for a predictive instrument that might indicate general student reading levels. When a relationship of sufficient magnitude existed between two variables, the score on one could indicate a general range on the other. (Fraenkel & Wallen, 2004). If a strong relationship existed between two variables, then scores from either should be able to indicate scores of the other. The practical usage, however, was to see if STAR was able to indicate how students might perform on the MAP test. It should be noted that the variables were not compared for a causal relationship rather they were examined just to show general relationships. The strength in the relationship between variables would help educators determine which variable to use to indicate general scores on the other.

Correlational research in this case was carried out to show relationships between variables. The severe penalties associated with low scores on the MAP test made it very valuable to be able to show relationships between variables so that so that educators could use this information to identify students at risk of scoring poorly on the MAP. Scores from the variables were examined to determine a correlation. High scores on one variable associated with high scores on the other variable showed, therefore, a positive correlation. Low scores on one variable associated with low scores on another showed a negative relationship. If that was found to be the result with either variable then the findings were used with some degree of certainty to indicate

scores within a certain range on the other. If the STAR showed a positive relationship to MAP scores, school officials would have more confidence in the administration of the STAR knowing that it had a positive relationship to MAP scores.

One last rationale that was used in doing correlation research was its simplicity. It was straightforward with two variables at a time to be examined. The rationale for using Pearson's Correlation was that all variables could be examined as how they were related to each other. Relationships were more visible when all factors were considered.

Research Setting

The research setting was one Southeast Missouri school district, which utilized the predictor variable and had all the subgroups in research questions one through four. The data was gathered from the participating school on site but analyzed at a different location. Most of the research setting was at the researcher's study where he entered and analyzed data.

Participants

The participants were third graders in one Southeast Missouri school district. This school uses purchased STAR assessments from an educational provider. Human subjects permission did not have to be granted from the University before the research began, as all data received had student names taken off and replaced with numbers. Not only student names, but also any other personally identifying factors were left out of the data in order to protect the individual. Again, for anonymity numbers were assigned to each student to enable the researcher to do the comparison study to find out what kind of relationships existed. The data collection size was 117 third grade students.

Data Collection Procedures

Data was collected on the third grade STAR common assessment after the second assessment of the school year. Two years of data on third graders (three third grade classes) were obtained and analyzed. The MAP Test scores, attendance, economic status, and grades were collected over two years as well. Data on the groups were analyzed through Pearson's Correlation.

Analytic Procedures

The scores from the predictor variables and the criterian variable were obtained from the sample district. The scores were then correlated, and the resulting correlation coefficient was examined to determine the degree of relationship or correlation between the variables (Fraenkel & Wallen). This coefficient is a decimal somewhere between 0.00 and +1.00 or –1.00. This researcher was looking for a coefficient that is close to +1.00, which indicates a strong positive relationship between the variables. A coefficient close to –1.00 indicates a strong negative relationship. Coefficients near 0 indicate little or no relationship.

Careful consideration was given to any alternative explanations for the findings in the research study. To maintain internal validity the researcher utilized data from two years of testing (STAR and MAP), plus two years of data from the other groups or variables. In doing this the sample size was 117 students with five different variables.

Summary

In summary, 117 data from 117 was collected to see if there were relationships between the MAP scale score, STAR scale score, attendance, economic status, and grades. Data was entered into an SPSS program and Pearson's Correlation was used to determine any relationship. Relationships near 1 or –1 indicated either a strong positive or a strong negative relationship. A

strong positive relationship indicated that both variables rose proportionally. A strong negative relationship indicated that as one variable rose the other fell at the same proportion.

Chapter 4

Analysis of Data

Introduction

The initial purpose of this study was to see whether there were means within the school to determine how a student would perform on the MAP test. The overarching rationale, however, was to determine that if there was a way to indicate how a student would perform on the MAP test, then could this also be used to in indicating reading skills in general. The issue at stake was student reading ability as it related to MAP scores. If there was a relationship between student reading ability and MAP scores then it would behoove educators to concentrate on reading readiness and take appropriate measures to improve reading readiness when the need arises. Again, the rationale behind this study went beyond improving reading ability to score well on the MAP. The results should also be used to monitor and improve reading ability so that the student can be successful in his or her entire educational experience.

This study compared five different variables in education and compared them with each other for relationships. This writer used Pearson's Correlation to determine the relationship strength between the five variables. The strength of relationship determined whether there was sufficient reason to accept the variable as a reliable tool to use in determining student reading ability. The variables examined were the STAR Test, attendance, grades, economic status, and MAP scores. The STAR Test had a scale score obtained after students took the test, which reflected the students' reading level. This score was used to see if there was a relationship between the other four. Attendance was determined at 96 to 100% as a group, next group was 90-95% , and below 90% as the last group. Grades were given the numerical values of A with a 4, B with a 3, C with a 2, D with a 1, and F with a 0. Economic status was determined by the

Free and Reduced count from the school district, with paid lunches being 0 and free lunches being 1. The scale score on the MAP test was used to determine the relationship it had with the other four.

Organization of Data Analysis

The data was analyzed using a correlation analysis. It was simply a tool to see if there were relationships between the five different variables and whether the relationships were strong enough to significantly enable acting upon them. The research was examined for each research question and null hypothesis. There was one null hypothesis for each research question. The strength of the correlational relationship will determine whether the relationship is significant.

The instrument used to determine the strength of the relationship is the SPSS program using Pearson's product-moment coefficient to determine relationships. This determined linear relationships to see if there was either a strong positive or strong negative relationship between variables. Pearson's covariance is obtained by dividing the covariance of the variables by the product of their deviations. The SPSS program does all that quickly and automatically so individually performing this task by hand is unnecessary. It might also be useful to note that this study is to determine correlational relationships not causal relationships.

Presentation of Descriptive Characteristics of Respondents

The subjects of this study were 117 third grade students. Student names were never visible to the researcher; rather numbers were assigned to each student prior to receiving the data. Each student was assigned the appropriate value for each variable. The STAR scale score, attendance, MAP scale score, free or reduced lunch status and semester grades were each given the numerical value for each student in the study.

See the table below for the first ten students in the study.

Table 1

Student	STAR SS	Attendance	MAP SS	F/R	Grades
1	244	1	578	1	2
2	725	1	691	1	4
3	567	1	661	0	4
4	419	1	644	1	4
5	521	0	649	0	4
6	564	0	694	1	4
7	494	0	672	0	4
8	277	2	656	1	4
9	432	0	665	1	4
10	614	0	650	1	4

Research Questions and Associated Null Hypothesis

Each research question had one associated null hypothesis. There were four questions and null hypothesis concerning each variable.

1. Is there a relationship between economic status as indicated by free or reduced lunch eligibility and student reading scores as measured by STAR?
2. Is there a relationship between grade point average and student reading scores as measured by STAR?
3. Is there a relationship between student attendance and student reading scores as measured by STAR?
4. Is there a relationship between third grade communication arts MAP scores and student reading scores as measured by STAR?

Null Hypothesis

The following are the null hypotheses:

1. There is not a relationship between economic status as indicated by free or reduced lunch eligibility and student-reading scores as measured by STAR.

2. There is not a relationship between grade point average and student reading scores as measured by STAR.
3. There is not a relationship between student attendance and student reading scores as measured by STAR.
4. There is not a relationship between third grade communication arts MAP scores and student reading levels as measured by STAR.

Analysis of Data

In this section of the study each research question and the corresponding null hypothesis was examined using the correlational data obtained from SPSS.

Research question 1 - Is there a relationship between economic status as indicated by free and reduced lunch eligibility and student reading scores as measured by STAR? Using Pearson's Correlation it was found that the strength of the relationship was weak at .-274.

Research Question 2 – Is there a relationship between grade point average and student reading scores measured by STAR? Using Pearson's Correlation the strength of the relationship was in the strong range with .553. This was at the lower end of the strong range.

Research Question 3 – Is there a relationship between student attendance and student reading scores as measured by STAR? The relationship shown by Pearson's Correlation indicated a number of -.017. This indicated either no or a very weak relationship.

Research Question 4 – Is there a relationship between third grade communication arts MAP scores and student reading scores as measured by STAR? Pearson's Correlation showed a strong relationship of .695.

Null Hypothesis 1 – There is not a relationship between economic status as indicated by free and reduced lunch eligibility and student-reading scores as measured by STAR. Since the relationship between these two variables was weak the null hypothesis was accepted.

Null Hypothesis 2 – There is not a relationship between grade point average and student readings scores as measured by STAR. Since the relationship was in the strong range the null hypothesis was rejected.

Null Hypothesis 3 – There is not a relationship between student attendance and student reading scores as measured by STAR. The relationship on Pearson's Correlation indicated no or, at the most, a very weak relationship. The null hypothesis was therefore accepted.

Null Hypothesis 4 – There is not a relationship between third grade communication arts MAP scores and student reading scores as measured by STAR. Pearson's Correlation, however, indicated a strong relationship between the two variables. The null hypothesis was rejected.

The table below shows the correlational relationships. A strong relationship will be a value of –1.0 to –0.5 or 1.0 to 0.5. A moderate relationship will be a value of –0.5 to –0.3 or 0.3 to 0.5. A weak relationship will be a value of –0.3 to –0.1 or 0.1 to 0.3. A very weak or no relationship will be a value of –0.1 to 0.1.

Table 2

	MAP	Attendance	Poverty	Grade	STAR
MAP	1	.035	-.129	.638	.695
Attendance	.035	1	.162	-.078	-.017
Poverty	-.129	.162	1	-.137	-.274
Grade	.638	-.078	-.137	1	.553
STAR	.695	-.017	-.274	.553	1

It should be noted that all the strong relationships were positive; therefore, values tended to show relationships in the same direction.

Summary

This chapter examined data concerning five different variables in order to determine relationships between them. There were 117 third grade students' grades, attendance, poverty levels, STAR Test scores, and MAP test scores that were examined to determine where, if any, relationships occurred. Two of the research questions were answered with a strong relationship, one showed a weak relationship, and one showed no or a very weak correlation relationship. Therefore, two null hypotheses were rejected and two accepted. The results also showed that MAP scores, grades, and STAR Test scores all showed a strong relationship to one another.

Chapter 5

FINDINGS, CONCLUSIONS, AND IMPLICATIONS

Introduction

This chapter will summarize the entire study examining the rationale for doing the study along with the research questions, which came from the rationale. Findings are presented that were obtained from SPSS using Pearson's Correlation. Conclusions concerning the research questions and null hypothesis are given with data to support the conclusions. Also, implications are addressed regarding what should be done now that the research revealed certain relationships. This makes the research useful and practical. Finally, future research is suggested on areas still questionable.

Summary of the Study

The reason for this study stemmed from the issue of high-stakes testing penalties associated with student ability to score at a proficient level as mandated through NCLB. Many schools in the Southeast Missouri have encountered penalties from the federal government through No Child Left Behind because they have not met the Adequate Yearly Progress (AYP) goals for student achievement on the MAP test. These penalties usually are some form of school improvement designation. This study examined variables already available to educators to see if there were some avenues that might help indicate how students would score on the MAP test. In particular, this study examined how well the STAR Test showed a relationship to the third grade communication arts scores on the MAP. The third grade communication arts MAP test relies heavily on reading comprehension and the STAR Test is a reading comprehension test given to students three times a year. It was speculated that by using the second STAR Test as a benchmark, it could help educators make decisions about interventions; if in fact it could be

shown that the STAR Test was a reliable good indicator of the third grade communication arts MAP score. Marzano (2000) wrote that asking students to apply certain knowledge periodically during the school year through benchmark testing; it would give teachers direction in knowing whether students understood the material and whether to proceed onward or to provide remedial interventions. The hope of this study was to have evidence that there were avenues to indicate a relationship to MAP communication arts student reading scores through the STAR Test and possibly grades. With this information teachers could intervene with targeted instruction where and when needed.

The subjects of this research were 117 third grade students from one rural Southeast Missouri school. The data was obtained over a two-year period in order to increase the subject numbers and ensure greater reliability in the outcome of the research. There were no subject names on the data received; rather numbers were substituted in the place of the names.

Findings

The review of the findings was presented in the same order as they were in chapter four.

Research question 1 - Is there a relationship between economic status as indicated by free and reduced lunch eligibility and student reading scores as measure by STAR? Using Pearson's Correlation strength of the relationship is a negative relationship at .-274, which is in the weak range. In the Pearson's Correlation with the other variables, economic status had no more than a weak relationship with any of them as well.

Research Question 2 – Is there a relationship between grade point average and student reading scores as measured by STAR? Using Pearson's Correlation the strength of the relationship was in the strong range with .553. This was at the lower end of the strong range. In

the Person's Correlation with the other variables grade point average had a strong relationship with MAP scores and STAR Test scores.

Research Question 3 – Is there a relationship between student attendance and student reading scores as measured by STAR? The relationship shown by Pearson's Correlation indicated a number of -.017. This indicated no or a very weak relationship. According to Pearson's Correlation with the other variables attendance had very little relationship to any of the other four.

Research Question 4 – Is there a relationship between third grade communication arts MAP scores and student reading scores as measured by STAR? Pearson's Correlation shows a strong relationship of .695. The Pearson's analysis of the other four variables showed that MAP, STAR Test scores and grades in reading had a strong relationship to each other.

Conclusions

Conclusions concerning research question 1 would indicate that economic status was a weak negative factor in relation to student reading scores on the STAR Test. Pearson's Correlation indicated the same conclusion when checking the strength of the relationship with MAP results. However, MAP data at this school as a whole indicated those on Free and Reduced Lunch status scored lower than their counterparts. The research in this study covered only third graders while the school was kindergarten through fifth grade.

Research question 2 indicates that reading grades had a strong relationship to STAR, and Pearson's Analysis also showed reading grades had a strong relationship to the MAP test. This was important since reading grades are available to the third grade teacher on a continual basis. Teachers also have many resources available through their reading programs to provide strategies to improve struggling readers.

Research question 3 indicates that attendance had very little, if any, relationship with the STAR Test scores, and Pearson's Analysis showed no relationship with the other variables. One observation that the reader should be aware is that the attendance for the third graders during the two years of the study was very good with a 95.15% attendance rate one year and a 95.79% attendance rate the next.

Research question 4 showed the strongest relationship between two variables. STAR reading scores and MAP scores showed a strong relationship. Since the STAR Test and the third grade communication arts MAP test were both essentially reading comprehension tests, it was not surprising that there was a strong relationship. It also showed that the funds spent for the STAR Test were not wasted on a product that did not do what it was intended to do. The STAR Test, MAP scores, and grades all showed a strong relationship to one another.

It should be noted that the Sig. (2-tailed) value was less than .01 indicating a significant positive correlation between the three. As one value went up the other values did the same. While the Sig. Value did show significance there are risks that it could be somewhat misleading. Some researchers, therefore, think that significance should be reported but perhaps should receive less focus when it comes to Pearson's r.

Marzano (2002) wrote that benchmarks should be written at all grade levels. Knowing that the STAR and reading grades, MAP scores are all related make them useful benchmarks in and of themselves without teachers having to spend large amounts of time writing benchmark tests. The STAR is a practical tool making it something that teachers already have and thus more likely to be utilized.

Implications

The implications from the research are that there are variables that show relationships between and may indicate how third grade students will do in reading and on the MAP Test. These variables are readily available to teachers and administrators at any time. The three variables that were related were MAP scores. STAR Test scores and reading grades. Teachers that have this information can use it periodically to determine who is ready to take the MAP test and also who needs more help or interventions in order to perform well on the MAP. The ultimate goal, however, was to make sure students were able to read well so that they would be successful in their entire educational experience.

In examining the results it is advised that school principals and other administrators should team with teachers in using data that could help determine student reading readiness. The principal from the school must emphasize that teachers monitor the data from grades and the STAR Test. Grades should be very easy as the teacher is the person entering grades, but monitoring the STAR Test is a slightly different matter. Mostly, this test is administered through a library, so communication with the person in charge of the library and the reading teacher is critical. Probably one of the most challenging areas of the teaching profession is communication. When it comes to STAR Test results, it is most likely one area to be overlooked by teachers if proper communication is not there with the library specialist. This communication must be fostered when one considers that the relationship between the STAR Test and MAP scores were stronger than between grades and MAP scores. So it is critical that the principal, as instructional leader, emphasize to teachers that it is extremely important to monitor the STAR Test as well as grades. Most all teachers will do as their principal requests; it is just that principals must make the request. If superintendents know this and communicate it to principals, and then if principals

communicate it to teachers: what better result can there be than teachers making alterations in teaching based on data that helps kids to improve.

Future Research

Future research should include a study concerning attendance and MAP scores for older students, and also economic status and MAP scores for older students. It is this researcher's opinion from experience and MAP data that, as students age, the variables of attendance and economic status become more of a factor in MAP scores. It seems that the federal government even acknowledged this, as economic status was one of the categories in No Child Left Behind. In most all schools this subgroup lags behind those that are not in this group. This writer feels that it is important to note that these groups basically have no difference in abilities on the third grade level, but something changes over time. What changes must be determined because the future education of students is at stake. If they had a bright future in third grade; why not nine years later as a senior in high school?

Summary

The purpose of this study was to determine if there were ways through benchmark testing to identify students that were having difficulty reading. If there were a reliable way to identify reading problems with students periodically throughout the school year, then intervention or remediation efforts could be initiated. In the world of high stakes testing measured by No Child Left Behind it would seem very beneficial to educators to identify areas of concern in students and provide appropriate interventions before spring testing. However, even if there was no high stakes testing, student reading ability should be something that is continually monitored. A question to this writer was whether the STAR Test and grades were reliable predictors of how a

student would do on the MAP test. Also, of interest was whether school attendance and the poverty level were related to reading ability.

Once all the data over two years was collected it was entered into an SPSS program to determine if there was a relationship between the variables. On research question 1 it was found that there was not a relationship between student reading level and economic status. It was noted that MAP scores in this area within the school as a whole showed lower scores for those on free or reduced lunch than those that were not. It should also be noted, as well, that economic status showed little or no relationship to any of the other variables at the third grade level.

Research question 2 showed that reading grades had a strong relationship to the STAR Test. The comparison was between the average of the first two quarters grades (semester grade) and the December STAR Test that each student was required to take. Reading grades showed no relationship with the variables of economic status and attendance.

Research question 3 showed that attendance had a very weak or no relationship with the STAR test. Attendance was split into three groups; those 96% and better, those 90-95%, and those below 90%. Attendance had neither a moderate or strong relationship with any other variable. It should be noted that there were very few students with attendance below 90%.

Research question 4 showed that a strong relationship existed between the MAP test and the STAR Test. In fact it was the strongest relationship between variables. However the STAR Test, MAP test, and reading grades all showed a strong relationship to each other.

Some conclusions are that there are ways to monitor student-reading levels throughout the school year. The fact that reading grades showed a strong relationship to student reading levels was important as teachers constantly monitor reading grades among students and most all reading programs provide supplemental material to help the struggling student. The fact that the

STAR Test also showed a strong relationship to student scores on the MAP and to grades makes this test a valuable tool as well to teachers. A whole class of STAR scores can be printed very quickly, therefore, teachers can easily check all the reading levels in class and identify those that need intervention to improve reading skills.

Two areas that did not show any relationship to student reading levels were economic status and attendance. What was interesting here is that as students aged MAP data indicate that these two groups tend to perform poorly on standardized testing. The students in this study were third graders. It has been noted previously, that a good study would be what changes over time to cause a student in third grade in a poor economic status to still be able to score well as his or her counterparts on the MAP Test, but then a few years later score significantly lower than his/her classmates.

This writer's concluding statement is that the STAR Test and reading grades are valuable tools that can be used to not only predict how a student will do on the MAP test, but also to use in identifying problem areas in reading. The knowledge gained by monitoring STAR scores and grades enable timely interventions while the problem can be corrected. Caring teachers will use this that information to help all students in their classrooms. School principals should also be aware of the relationship between the STAR Test and MAP scores, and then check to see if there is a significant difference between the STAR Test scores and reading grades. If there is, then the reading program may need to be evaluated or possibly the reading teacher may need improvement. The STAR should provide an evaluation of where a student is performing in reading and also how the current reading program is affecting student learning.

References

Bates, R. (2005). No child left behind. *Delta Kappa Gamma Bulletin, 71:2,* 1.

Bielefeldt, Talbot (1989). Classroom Discipline. *National Association of Elementary School Principals, Volume 5, Number 2.*

Boling, C., Martin, S. H., & Martin, M. A. (2002). The effects of computer-assisted instruction on first-grade students' vocabulary development. *Reading Improvement*, 79-88.

Bridges, E. & Hallinger, P. (1997) Using problem-based learning to prepare educational leaders. *Peabody Journal of Education, 72(2),* 131-146.

Bruffee, K., (1999). *Collaborative learning.* Baltimore, MD: The Johns Hopkins University Press.

Burns, S. Griffin, P. & Snow, C. (1999). *Who are the children who have reading difficulties?* Retrieve November 11, 2010 from www.readingrockets.org/article/295

California Department of Education. Retrieved March 25, 2010 from http://pubs.cde.ca.gov/ tcsII/ch2/comnbnchmrkassess.aspx

Center for Curriculum Renewal. Retrieved March 25, 2010 from www.curriculumrenewal.com

Christensen, C., Aaron, S., & Clark, W. (2005). Can schools improve? *Phi Delta Kappan, 86,* 545 - 550.

Deno, S. Ongoing Student Assessment. Retrieved November 6, 2008 from http://www.rtinetwork.org

Department of Elementary and Secondary Education. Questions and answers about no child left behind. Retrieved April 17, 2005 from

http://dese.mo.gov/divimprove/nclb/QandA.html

Department of Elementary and Secondary Education. Questions and answers about senate bill 319. Retrieved April 17, 2005 from http://www.dese.state.mo.us/schoollaw/LegFolder/SB%20319sumhtm

Department of Elementary and Secondary Education. Adequate yearly progress. Retrieved April 17, 2005 from http://dese.mo.gov/plannng/profile/apr/ayp100061.html

Department of Elementary and Secondary Education. Show-Me Standards Communication Arts. Retrieved January 4, 2010 from http://dese.mo.gov/standards/comarts.html

DuFour, Dufour, Eaker, & Many. Retrieved March 25, 2010 from http://www.whiteriver.wednet.edu/school/plc/powerpoint/commonformativeassessment.ppt

DuFour, R. (1995). Restructuring is not enough. *Educational Leadership, April,* 33 – 36.

DuFour, R. (1997). The school as a learning organization: Recommendations for school improvement. *NASSP Bulletin, 81,* 81 – 87.

DuFour, R. (1999). Help wanted: Principals who can lead professional learning communities. *NASSP Bulletin, 83,*12 – 17.

DuFour, R. (2004). What is a "professional learning community"? *Educational Leadership, May,* 6 – 11.

DuFour, R. (2004). Culture shift doesn't occur overnight-or without conflict. *National Staff Development Council, 25,* 63 – 64.

DuFour, R. (2004). Leadership is an affair of the heart. *National Staff Development Council, 25/1,* 67 – 68.

Fowler, F. (2004). Policy studies for Educational Leaders. Upper Saddle River, NJ, Merrill

Prenticice Hall.

Fraenkel, J., & Wallen, N. (2004). *How to design and evaluate research in education*. New York, NY: McGraw-Hill

Fuchs, L. Progress Monitoring Within a Multi-Level Prevention System. Retrieved November 6, 2008 from http://www.rtinetwork.org

Fullan, M. (2001). Book Review. [Review of the book Leading in a Culture of Change]. Jossey-Bass, San Francisco, CA.

Hashweh, M. (2003). Teacher accommodative Change. *Teaching and teacher education, 19,* 421-434.

Kovaleske, J. The RTI Data Analysis Teaming Process. Retrieved November 6, 2008 from http://www.rtinetwork.org

Lencioni, P. (2002). The five dysfunctions of a team. San Francisco, CA, Jossey-Bass.

Lezotte, L. (1992). Principal insights from effective schools. *Education Digest, 58,* 24 – 28.

Lezotte, L. & Bancroft, B. (1985). Growing use of effective schools model for school improvement. *Educational Leadership, March,* 23 – 27.

Marzano, R. (2000). Implementing standards-based education. *Teacher Librarian, 28:2,* 30 – 32.

Marzano, R. (2003). *What works in schools*. Alexandria, VA: Association for Supervision and Curriculum Development.

Nonada, I. & Takeuchi, H. (1995). The knowledge creating company. New York: Oxford University Press.

Prasse, D. Why Adopt an RTI Model? Retrieved November 6, 2008 from http://www.rtinetwork.org

Renaissance Learning. *StandardsMaster*. Advertisement received in January of 2005.

Roby, D. (2003). *Research on school attendance and student achievement: a study of Ohio Schools.* Educational Research Quarterly volume 28.1, 4-15.

Rose, L. & Gallup, A. (2004). The 36th Phi Delta Kappa/Gallup Poll of the public's attitudes Toward the public schools. *Phi Delta Kappan 86 (1),* 41-52.

Self-Transformational Series: Issue No. 34. *The value of reading.* Retrieved July 21, 2010 from http://www.theosophy.ph/trans_34.htm#TheValueofReading

Star Reading. (2004). *Renaissance Learning*. Wisconsin Rapids, WI

Stiggins, R. (2004). New assessment beliefs for a new school mission. *Phi Delta Kappan, September,* 22 – 27.

Thomas, J. & Stockton, C. (2003). *Socioeconomic status, race, gender, & retention on student achievement.* Retrieved January 20, 2012 from www.uscaedu/essays/vol72003/stockton.pdf

Trelease, J. (2001). *The read-aloud handbook.* New York, NY: Penguin Books

Wikipedia. *Reading comprehension.* Retrieved June 11, 2010 from http://en.wikipedia.org/wiki/Reading_comprehension

Wong, H. & Wong, R. (2001). *The first days of school*. Mountain View, CA: Harry K. Wong Publications, Inc.

Wren, S. (2004). Ten myths of reading instruction. *Texas Education Review.* 1-8. Retrieved March 21, 2004, from http://www.educationreview.homestead.com

Yukl, G. (2002). *Leadership in organizations.* Upper Saddle River, NJ: Prentice Hall.

VITA

The author of the research is Don Moore. He is superintendent of schools at the Scott County R-4 School District. This is his thirtieth year in education as he was a teacher for eight years, principal for ten years, and this makes his twelfth year as superintendent. His interest in assessments and how they may have common relationships with other areas of education was spawned mainly by the penalties in No Child Left Behind when districts did not meet Adequate Yearly Progress (AYP). In this information age we cannot afford to not examine all data that may help in the educational process, and this study examines certain data areas that may help indicate how children might perform in reading comprehension, which could affect scores that show AYP.

Don Moore has been married 34 years to Pamela and has a daughter, Hannah (married to Jared Schultz), and one grandson (Gabriel Schulz). They all reside in Whitewater, MO.