

Running Head: RTI Affects SRI Scores in 2nd and 3rd Grade

DIFFERENCES IN STUDENT ACHIEVEMENT BETWEEN STUDENTS TAUGHT
WITH RTI AND STUDENTS TAUGHT PRIOR TO THE IMPLEMENTATION OF
RTI

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Submitted to

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Submitted in Fulfillment for the Requirements for
61-683 Research Paper

Spring 2013

January 12, 2014

ABSTRACT

This study was completed to find if there was a significant difference between Scholastic Reading Inventory (SRI) scores from the years there was a Response to Intervention (RTI) implementation verses the years there was no RTI implementation. Research shows that there was a significant difference. The P-Value was 0.03, which shows a significant difference between the pre and post SRI scores from 2nd grade and 3rd grade. The findings of this study support the conceptual underpinning that there is a significant difference between the SRI scores from the years taught with RTI implementation verses the years not taught with RTI. It is recommend that this school continue to implement RTI in order to help its' SRI scores increase in 2nd and 3rd grade. The reasoning behind this is based on the findings that there is a definite significant difference between the SRI scores when RTI was implemented verses the years RTI was not implemented. After compiling and review the findings of this study, current research and literature, and the statistical data from the state, it is found that there is a significant difference on SRI scores when RTI is utilized at the elementary school setting.

INTRODUCTION

Background, issues and concerns.

There have been concerns about student performance on standardized state tests, specifically on the Missouri Achievement Performance Test (MAP), in the state of Missouri. In order to make Adequate Yearly Progress (AYP), a certain percentage of students must score in the proficient or advanced levels. It is important to ensure that students are mastering the objectives put forth by the state of Missouri, and therefore, need to perform at a high level on these tests. Some may wonder if students are not making these gains due to lack of teacher instruction at individualized levels. Researchers are concerned that there is a gap between what students know and what students need to know based on teacher instruction.

Practice under investigation.

The practice under investigation looked at Scholastic Reading Inventory (SRI) performance scores. There was an investigation to see if there was a significant difference in students who have been taught within the differentiated methods of Response to Intervention (RTI) and students who have not been taught in the differentiated instruction. This was looking at the disaggregated to see if there is a difference, brain research will be studied to see how RTI could be applied to a classroom.

School policy to be informed by study.

Every school district in the state of Missouri must meet the AYP standards on the MAP so if there is a significant difference in SRI scores based on the implementation of RTI, teachers should make sure they are differentiating instruction so they are able to reach all students.

Conceptual underpinning.

No Child Left Behind (NCLB) indicates that educators across the United States have to meet student achievement where they are. AYP was set after the implementation of No Child Left Behind. Shortly after AYP, educators began tracking student achievement data. Educators have now begun implementing Response to Intervention (RTI) in order to meet student needs. Students in the classroom read and learn at different levels. It is the teachers' responsibility to meet the differentiated student needs. Because students learn at different levels, RTI provides different levels for students to learn. Allowing different levels or Tiers in the reading structure of the classroom does this. The first level or Tier 1 is the whole group intervention. This can be accomplished through reading workshop with the whole class. Tier 1 is done on a daily basis. The second Tier is allocated for those students who need a small group structure. Tier 2 is done on a daily basis as well. The third Tier is designed for students who still need one on one support. Tier 3 needs to be administered 3-5 times a week. Teachers are first aware of the students' individual needs by giving a common assessment based on the reading goal, which is aligned to the student standards. The basic fundamental purpose of RTI was the increase student achievement in reading based on the idea of meeting students where they are and helping those students on a smaller group or one to one level.

Statement of Problem.

If there is a difference for students who have been taught using RTI and students who have not been taught using the RTI framework, based on student performance on the SRI test, teachers need to know how to differentiate instruction within the RTI framework.

Purpose of the study.

To find if there is a relationship between the implementation of RTI and student achievement.

Research questions.

RQ#1: Is there a difference in student achievement between students taught with RTI and students taught prior to the implementation of RTI?

Null hypothesis.

There is no difference in student achievement between students taught with RTI and students taught prior to the implementation of RTI.

Anticipated benefits of the study.

If RTI is proven to make a significant difference with student achievement, then districts and teachers should plan to make more small group RTI implementation.

Definition of terms.

AYP- Adequate Yearly Progress- The No Child Left Behind Act, instituted in 2000, sets certain goals for school districts to achieve to show student performance. One factor is the MAP test in elementary school.

Differentiated Instruction- changing instruction to fit needs of different groups of students so every student is able to master the skills and objectives associated with the course objectives.

RTI- Response to Intervention- process used by schools to help meet different student needs within different levels of teaching.

MAP- Missouri Achievement Performance- assessment conducted by the state of Missouri to assess students at the end of the year.

SRI- Scholastic Reading Inventory Test- assessment used by teachers to monitor student reading level and reading ability.

Summary.

A study was conducted to see if there was a significant difference between students who had been taught using the RTI implementation and students who had not been taught using the differentiated instruction. If the t-test concludes there was a significant difference, teachers should differentiate instruction and implement the use of RTI so every student can perform at their highest ability. Since students have different learning styles and learning paces it is necessary to utilize many teaching methodologies to help all students be successful. This can be used within the different RTI Tiers as a way to reach all students where they are. After this study is completed, school districts and elementary schools can benefit by looking at the performance data of both sets of students and provide professional development on how to fully implement the proper use of RTI.

REVIEW OF LITERATURE

The U.S. Department of Education examines the process and tools needed to successfully implement the process of RTI or Response to Intervention. The Department of Education says that the basic understanding of the RTI process is that it is a multilevel prevention system that includes three multilevel steps. Step one is the high quality core instruction that the students will receive in the classroom. Step two is interventions within the classroom (small groups). Step three is individualized intervention of increased intensity. (Education, 2012)

Data based decision making is crucial to every step within the RTI process. Teams within the school need to use data based decision-making and progress monitoring in order to make decisions about students who are within the third level of the RTI process and therefore can discuss the disability identification system process in accordance with state law. (Education, 2012)

There is a much deeper look into the effective decision making processes and differentiated steps on what those specific processes may look like within schools. First schools must look at the effectiveness of their screening data. Was an appropriate screening data tool(s) used to measure the students' progress in learning in either reading or math? Secondly, was the screening data aligned to the learning expectations? If answered yes, then the school must move on to step two. (Disabilities, 2011)

Step two says that intervention in small groups must be done through classroom teachers or the use of reading teachers if teaching at a Title building. Listed below step two is a number of questions one must ask before and during the process of step two. Some examples of these questions are: have students mastered prerequisite skills? Is adequate instructional time being allowed for the problem area? Where problems are

detected, is the screening being repeated at regular intervals to monitor student progress? (Disabilities, 2011)

If a teacher answers yes to questions listed like the ones stated above, step three becomes essential. One must go back and evaluate individual interventions. Was an assessment conducted to verify that the intervention works for the student prior to starting the intervention in the classroom? Was student performance assessed each week to monitor intervention effectiveness? Again, if answered yes, teachers move on to step four. (Disabilities, 2011)

Step four indicates that teachers must realize student need for individualized instructional learning. Is this student learning at appropriate levels depending on the grade he/she is in? (Disabilities, 2011)

Step five indicates that the use of data can be used to determine the need to eligibility for special education services. (Disabilities, 2011)

There are also many different points of view from the teachers, parents, districts, as well as an attorneys, to see if RTI really is effective or not. The Cayuga-Onondaga BOCES gathered data from 8 out of their 9 school districts to determine whether the success of their RTI process was increasing or decreasing. The special education improvement specialist claims that the process of classifying a student as in need of special education is becoming more efficient thanks to the RTI process. Their referrals have dropped significantly from 160 in the year 2007-2008, to 69 referrals in the year 2010-2011. (DuBose, 2011)

Parents, who feel as though their child needs special education services, now have to slow down because of the RTI process. The purpose of RTI is like an early warning

system for students who are struggling but does not necessarily mean those students need special education services. (DuBose, 2011)

An attorney was interviewed about his thoughts concerning the legality of the RTI process. The attorney stated that he is concerned that students with true learning disabilities will languish in the general education setting too long when they should be classified as and given special education services sooner rather than later. He suggests that educators need to use this system properly so teachers can begin noticing students who need special education services right away and begin the screening process immediately. (DuBose, 2011)

What about RTI in the secondary school setting? Implementing RTI in the secondary school setting asks questions such as: how does the rationale for RTI relate to secondary education? What opportunities does RTI afford middle, junior and high schools? What challenges exist with RTI at secondary levels? (Ehren, 2011)

One first needs to consider the primary purpose of RTI. RTI was created as a new way to help students who are struggling or help pinpoint students who have needs within your classroom. RTI helps prevent students from being labeled as students with disabilities and it provides a difference between students who truly have a learning disability and those students who need extra one on one time. If you consider that prevention is mainly used within the primary setting, it may not be reasonable to use RTI as a prevention method in the secondary setting. However, if you consider literacy as a key to academic success in secondary settings, helping students who continue to have a need for literacy attention, RTI could be used as prevention in connection with literacy in the middle and high schools. Students who struggle with content, in connection with

literacy, may require more help than their classroom teachers can give them during their hour. An RTI approach can address the ways the literacy problems that are inhibiting that student success without burdening the teacher. For example, a struggling student, like the example given above, can be given an intensive reading class taught by a reading specialist teacher instead of the regular teacher. In the past, secondary schools have found struggling students, and tried to make them eligible for special education services. Not only is this solution more costly, but also it labels a student with a disability when he/she may not be. Not all students who need extra help end up qualifying for special education services. This leaves the student without assistance unless RTI can be set in place in the secondary setting. (Ehren, 2011)

There are other issues that will come into play within the secondary school system. In high school there are credits that students need in order to graduate. If a student needs substantial intervention he or she may not be able to meet graduation requirements in four years. (Ehren, 2011)

The framework of RTI will also be very different than the framework used in primary grades. The one on one approach or small group approach, which is used in elementary grades, may disrupt the typical middle or high school students who do not want to be singled out. Upper grades will have to look at other structures such as class within a class, labs, before or after school programs, special elective courses, and co teaching. (Ehren, 2011)

Allowing parents in on the new system gives their children the best opportunity for academic success and diminishes the likelihood of learners falling behind. RTI is designed to address and resolve academic challenges right away—before they become

persistent problems that can have broader effects not only on academic achievement but also create social and emotional challenges. It also allows for teachers' new insight on how to best meet their students' needs. RTI emphasizes the importance of instruction that targets learners' strengths and interests. Who better than caregivers to provide this kind of individualized information about children? (Whitten, 2009)

The need for different teams for RTI to be successful within a school building is also vital for its success rate for student achievement. The three different teams are: Navigational Team, Grade Level Team and Support Team. The Navigational Team is responsible for implementing and maintaining RTI programs within a school or district. This group oversees staff development and different screening processes. The Grade Level Team is typically classroom teachers who teach the Tier 1 Whole Group/Class as well as Tier 2. These teams are responsible for guiding instruction within the Tier 1 and 2 within their respective grade levels. The Support Team usually consists of literary specialists (within Elementary schools these could be reading teachers used for guided reading and the teaching of Tier 3). These teams help implement the Tier 2 and Tier 3 levels of interventions in the general education classrooms by pulling out or pushing in guided instruction. (Whitten, 2009)

RTI is an addition to our nations special education law and our schools. It is a process that schools can use to help children who are struggling academically or behaviorally. The primary focus is the academic side of the RTI process. One of the underlying premises is the possibility that a child's struggle may be due to a lack of adequate teaching or in the curriculum. Because of RTI schools can identify students who are at risk, monitor their progress and provide evidence-based interventions and

adjust their teaching depending on the students' responsiveness and can therefore identify students with learning disabilities or other disabilities. The school provides research-based interventions while the child is still in the general education environment. During this time, the teacher closely monitors the student's progress and adjusts their intensity or teaching style according to the student's progress. RTI is essential when identifying students who have learning disabilities. (NICHY, 2012)

The NEA (National Education Administration) offers the basics needed to understand RTI. There are basic components of RTI in detail and what components are necessary to successfully initiate RTI. In order for RTI to be successful in the elementary school setting, the school board and administration of that school district must make it a priority for the entire district. It is imperative that every school is implementing this RTI process. There are different types of support are necessary from the federal level all the way down to the school/classroom level. In order for a district to properly implement RTI, there needs to be federal understanding as well as to what RTI is and can do within the classroom. Since RTI helps the process of evaluating students based on a common assessment and the pulling of small groups, which can lead to an educator's knowledge of where students are learning, which in turn can allow teachers to know if a student has a learning disability, which can help form an IEP, which is a federal document, it stands to reason why the federal government is aware of the procedures and components of the RTI process. (Rochel, n.d.)

There are benefits of the RTI process and some teachers are slow to commit to an RTI approach. The current SPED model is dubbed the "wait to fail" model. This is an approach where teachers wait for students to be far behind before they provide

intervention. RTI is the opposite of the “wait to fail” approach. The RTI approach is where teachers collect data based on student progress in small groups over the course of a few weeks. This is all based on student progress over a common formative assessment. Now, the reason some teachers are slow to accept RTI is that it is a lot of work for classroom teachers. Lots of data is collected (from small groups) and many schools do not have as many highly qualified adults to conduct the interventions that teachers feel are necessary. Essentially, teachers are feeling overwhelmed with RTI, but it can work for students when conducted properly. However, RTI focuses on finding students who have learning problems early. This is why many educators implementing RTI in their classrooms, are implementing the process for the better of their students and their learning in the school. (Yaccino, 2008)

RESEARCH METHODS

Research design.

A quantitative study was conducted to see if there was a difference in achievement on the Scholastic Reading Inventory tests. The independent variable being tested were the years the students were involved in the RTI process and the years the students were not involved in the RTI process, while the dependent variable tested was the SRI exam scores. If the difference is found significant in the SRI scores based on the different in RTI being utilized and non-utilized, teachers should be informed and implement RTI to better support student learning in the elementary classroom.

Study group description.

Two classrooms of 2nd grade students and two classrooms of 3rd grade students from the year 2009-2010, 2010-2011 and 2011-2012 were selected to be studied with the purpose of investigating if RTI implemented in the elementary school setting is worthwhile to student progress in reading. This school is a Title 1 school with 85% free and reduced lunch students. There are also 32 students who get served for English Language Learners.

Data collection and instrumentation.

Archived data from SRI was collected to identify raw scores of 2nd grade students and 3rd grade students on the SRI test from the 2007-2008, 2008-2009, 2009-2010, 2010-2011, 2011-2012 school years.

Statistical analysis methods.

A t-test was conducted to find if there is a significant difference between students taught with the implementation of RTI as compared to the students who are not taught using the RTI process. The source was broken into two categories: years the students were not taught with RTI and years the students were taught with RTI. The mean, mean D, t-test, df, and p-value were concluded from this test. The Alpha level was set at 0.25 to test the null hypothesis: There is no difference in student achievement between students taught with RTI and students taught prior to the implementation of RTI.

FINDINGS

A t-test was conducted to decipher whether there was a difference in performance from the years taught with RTI verses the years not taught with RTI implementation. The following tables, graphs, and charts will depict the organized findings based on the statistical raw data found on the SRI accounts from a district in the state of Missouri. There are different years of data being compared: 2007-2009 verses 2009-20012.

Figure 1

t-Test Analysis Results for SRI scores Pre and Post RTI Implementation

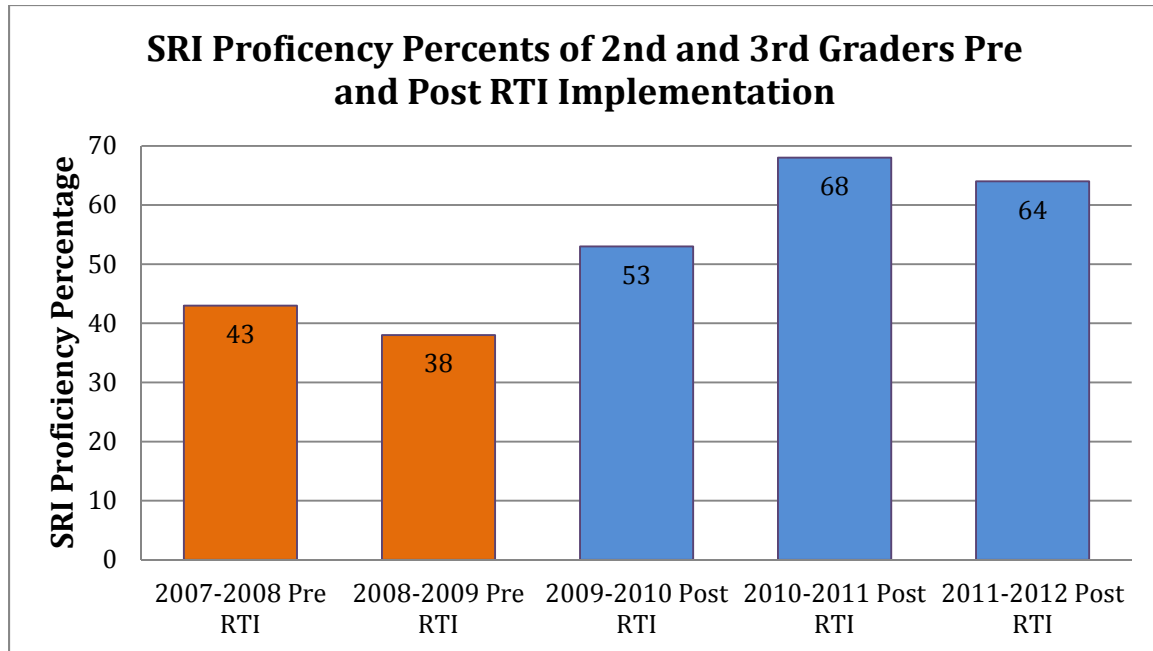
Source	Mean	Mean D	t-Test	df	p-value
Pre RTI (n=4)	40.5				
Post RTI (n=6)	61.5	-21.0	-2.62	8.00	0.03

Note: Significant when $p \leq 0.25$

Different years were selected for a study to determine if there is a difference between RTI implementation and SRI scores. The data collected from the 2nd and 3rd graders at the school contains the percentage of students that were proficient on the SRI prior to RTI implementation and post RTI implementation. The mean of the Pre-RTI implementation was 40.5 and the mean of the Post-RTI implementation was 61.5. The Mean D, or difference between the two groups, was 21.0. The t-test result was -2.62 and the df was 8.00. The null hypothesis states that there is not a significant difference in student achievement between students taught with RTI and students taught prior to the implementation of RTI. This null hypothesis was rejected because the p-value, 0.03, is lower than the alpha level, 0.25. This shows that the implementation of RTI does

significantly impact the SRI scores of students at the 2nd and 3rd grade level at an elementary school. Students taught with RTI outperformed the students that were not taught with RTI.

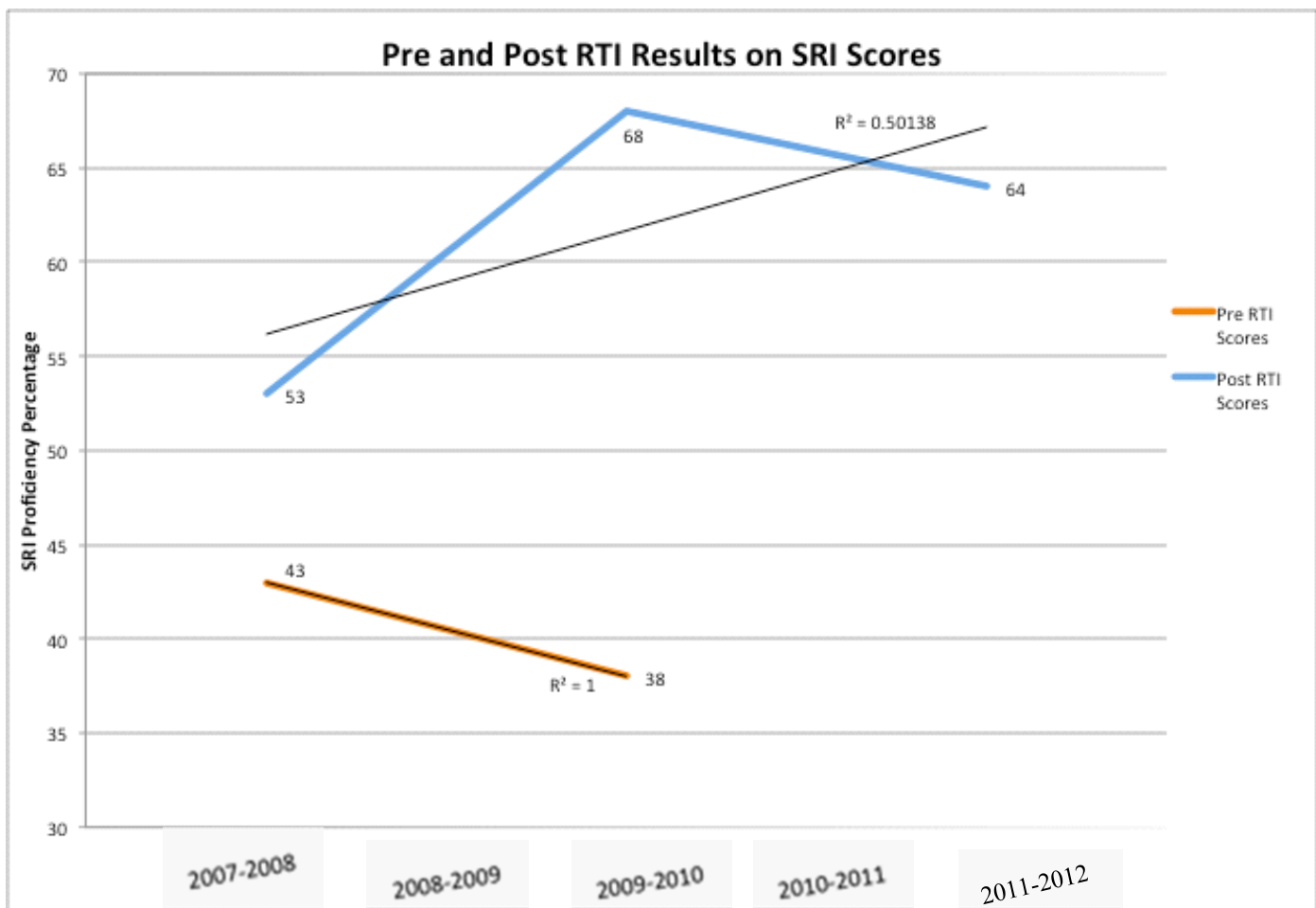
Figure 2

Differences in SRI scores Pre and Post RTI

There are two different independent variables being investigated. The two independent variables being before RTI and after RTI. The years that RTI was not implemented were 2007-2008 and 2008-2009. The years that RTI were implemented were 2009-2010, 2010-2011 and 2011-2012. The dependent variable being investigated were the SRI proficiency scores from 2nd and 3rd grade combined. The chart above shows that 2nd and 3rd graders took the SRI test in the years 2007-2012. The chart also shows that the students had a better SRI proficiency percentage during the years 2009-2010, 2010-2011 and 2011-2012. Those were the years the school had begun to implement the use of RTI in 2nd and 3rd grade. 53% of 2nd and 3rd graders were proficient on the SRI

during the year 2009-2010. 68% of 2nd and 3rd graders were proficient on the SRI during the year of 2010-2011. 64% of 2nd and 3rd graders were proficient on the SRI during the year of 2011-2012. In comparison, 2007-2008 only 43% of 2nd and 3rd graders were proficient on the SRI. In 2008-2009 only 38% of 2nd and 3rd graders were proficient on the SRI.

Figure 3



The SRI was given in 2007-2012 to 2nd and 3rd graders at the elementary level. This chart above is showing the SRI proficiency scores from 2007-2012. From 2007-2009 the SRI was administered to 2nd and 3rd graders without RTI being implemented. From the year 2009-2012, the students were given instruction using RTI. According to the chart above, the Post RTI scores show

a proficiency level going from 38% to a 53% in the first year of RTI implementation. From the year 2009-2010 the SRI scores increased from a 53% to a 68% for 2nd and 3rd grade. The following year decreased from 68% to 64%. However, the trend line shows the Post RTI scores show an increase of the 2nd and 3rd grade SRI proficiency levels while the trend line of the Pre RTI scores show a decrease in the SRI proficiency scores. The trendline for the Pre RTI has an R-squared value of 1.00. This shows a direct correlation of a decrease in scores. However, the trendline for the Post RTI has an R-squared value of 0.5. This shows an upward trend in the SRI scores as RTI implementation is incorporated each year. Although the R-squared of 0.5 is of average significance, the upward trend shows an overall increase in the Post RTI scores. Further analysis of increased data should show an increase correlation.

All of these findings answered the research question: “Is there a difference in SRI scores from years RTI was implemented from years where RTI was not implemented?” Figures 1-3 reported there was a significant difference in performance from the Pre RTI and the Post RTI on the SRI proficiency scores in 2nd and 3rd grade.

CONCLUSIONS AND RECOMMENDATIONS

The outcomes reported from this study show that RTI impacts the performance levels of students taking the SRI. The findings show there is a significant difference between SRI proficiency levels from the years taught with RTI verses the years not taught using RTI. The t-test results indicate that the p-value was 0.03, which was much lower than the alpha level set at 0.25; therefore, the null hypothesis tested is indefinitely rejected with confidence. There is a significant difference between SRI scores pre and post RTI implementation at the 2nd and 3rd grade level.

The conceptual underpinning of RTI implementation at the elementary level is strongly supported by these research findings. The many concerns about student performance on standardized state tests can be readily affected if elementary schools implement RTI practices in their buildings. In order to make AYP there needs to be a certain percentage of students who must score in the proficient or advanced levels. In order to ensure that all students are mastering the objectives put forth from the Department of Elementary and Secondary Education (DESE), educators should be implementing RTI as a way to meet all student need in the classroom. Researchers are alarmed at the gap between what students know and what students need to know based on teacher instruction.

It is imperative therefore to begin implementing RTI into the elementary setting at the 2nd and 3rd grade level. This research shows whether or not SRI scores increased as a result of RTI implementation. However, after concluding this study there is some further studies that could be conducted. This research could also show whether or not RTI in the

upper grades 4th-6th could also help increase SRI scores. There could also be a nationwide study to see if these findings are true across the United States.

Professional development needs to occur across the state of Missouri to ensure that teachers are aware of the different steps within RTI in order for students to have a better opportunity of one-on-one learning at the appropriate level of instruction.

It is recommend that additional studies be completed to investigate how RTI affects the SRI scores at an even higher level such as 4th grade through 6th grade. It is even propose that middle school and high school studies be performed to see if implementing RTI at the middle or high school level would increase student performance. These studies would determine if RTI is beneficial for student success throughout each grade level not just in 2nd and 3rd grade. Further research should be conducted on if there is a difference between RTI implementation and SRI scores in a Title 1 building verses a non-Title 1 building. This study would determine if there was a difference between the differentiated instructions given at one type of school verses another school.

REFERENCES

- Disabilities, N. C. (2011, n.d. n.d.). *RTI Network*. Retrieved February 20, 2013, from RTI Action Network: www.rtinetwork.org
- DuBose, B. (2011, April 11). *Spectrum K12*. Retrieved February 20, 2013, from [spectrumk12: www.spectrumk12.com/blog/does_response_to_intervention_really_work/](http://spectrumk12.com/blog/does_response_to_intervention_really_work/)
- Education, U. D. (2012, December 1). *RTI 4 Success*. Retrieved February 20, 2013, from National Center on Response to Intervention: www.rti4success.org
- Ehren, B. J. (2011, n.d. n.d.). *Response to Intervention in Secondary Schools: Is It in your Radar Screen?* Retrieved February 20, 2013, from [rtinetwork: www.rtinetwork.org/learn/rti-in-secondary-schools/reponse-to-intervention-in-secondary-schools](http://rtinetwork.org/learn/rti-in-secondary-schools/reponse-to-intervention-in-secondary-schools)
- Whitten, K. (2009, n.d. n.d.). *Free Spirit Publishing*. Retrieved February 20, 2013, from RTI Success: www.freespirit.com
- NICHY. (2012, August n.d.). *Response to Intervention*. Retrieved March 17, 2013, from National Dissemination Center for Children with Disabilities: www.nichy.org/schools-administrators/rti
- Rochel, D. (n.d., n.d. n.d.). *Response to Intervention: A Transformational Approach*. Retrieved March 17, 2013, from NEA: www.nea.org/assets/docs/HE/PB27_ResponsetoIntervention.pdf
- Sourcebook, T. P. (2009, March 16). *Education P.I.* Retrieved February 20, 2013, from Edweek: www.edweek.org/tsb/articles/2009/01/02rtichat.h02.html
- Speece, D. (2003, n.d. n.d.). *How Progress Monitoring Assists Decision Making in a Response-to-Instruction Framework*. Retrieved February 20, 2013, from National Center on Student Progress Monitoring: www.studentprogress.org
- Yaccino, S. (2008, July 25). *New Strategy to Keep Kids Out of Special Education*. Retrieved March 8, 2013, from US News and World Report: www.usnews.com/education/articles/2008/07/25/new-strategy-to-keep-kids-out-of-special-ed

