THE EFFECT OF RESPONSE TO INTERVENTION (RTI) ON STUDENT ACHIEVEMENT IN 1\textsuperscript{st} GRADE

By

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ABSTRACT

The purpose of this study was to determine whether or not the use of RTI (Response to Intervention) in a first grade classroom made a significant difference upon student achievement. An elementary school in a rural Midwestern area had no implementation of RTI in the 2010-2011 school year, then implemented the RTI model in the 2011-2012 school year with a 30 minute implementation for the second half of the year in reading, then the 2012-2013 for 30 minutes in reading and then 30 minutes of math. The reading RTI has been monitored by the use of the DIBELS assessment though a beginning, middle, and end of the year benchmarks as well as progress monitoring every 2 weeks throughout the year.

To analyze the DIBELS assessment the researcher found an average of all of the scores, compared the progress between the beginning of the year (BOY) to the middle of the year (MOY), middle of the year to the end of the year (EOY), and then the beginning of the year to the end of the year. I then ran an ANOVA to see if there was a significant difference between the beginning of the year and the end of the year. Through this analysis I found that there was a significant difference and that RTI in this case can be said to be effective.
INTRODUCTION

Background, Issues and Concerns

The 1st grade of a Midwest area's School District began ability level grouping for RTI (Response to Intervention) during the 2nd half of the 2011-2012 school year. Currently this Elementary has been designated a focus school due to low achievement scores on the MAP assessments. To help improve achievement in all areas the school implemented RTI in an attempt to place a Tier II into the educational system so that intervention would be available for students who are not mastering essential skills. The RTI model is put into place for all students so that students who need Tier II instruction to be successful will have the additional intervention, but as well as for students who need additional enrichment would also have time to go beyond the regular classroom instruction and work more on application of skills. Would like to look at the data from a 1st grade classroom over the course of 3 years, 1 where there was no ability level grouping and RTI, the next where it was only utilized for part of the year, and this year where RTI and ability level grouping was started at the beginning of the year. The concern is of the data that was kept by the school district to support this study. The researcher has permission from the teacher and the school principal to use the data from all 3 years.

Practice under Investigation

The Midwestern area elementary adapted RTI and ability level grouping in the 2011-2012 school year as a part of the PLC (professional learning community) process to help students achieve at a higher rate. The school began in January with 30 minutes per day of RTI for reading and continued for the rest of that school year. The following school year the school added 30
minutes per day for math RTI and reading RTI, but at this point in the first grade only Reading has been ability level grouped.

School Policy to be informed by Study

It is generally believed that using RTI with all students is best practice, especially when all decisions are made with current student data. Data teams should be formed using the PLC process to help individual teachers determine the need of intervention for every student, group the students, then develop and implement strategies for students to increase their achievement.

Conceptual Underpinning

In the Response to Intervention Model the schools use different modes of teaching with the anticipated result of furthering the achievement of each individual student in the selected area. While looking at RTI (response to intervention) one must also be aware of IDEA (the Individuals with Disabilities Act), No Child Left Behind, and more recently the Common Core State Standards (Crocket, 2007) and how RTI can then must be used to help with the underachievement of all students. “Response to intervention is the practice of providing high-quality instruction and intervention matched to student need, monitoring progress frequently to make decisions about changes in instruction or goals and applying student response data to important education decisions.” (Elliott, 2008, p. 1) It is generally believed that RTI will increase student achievement for all students and is best practice for all schools.
Statement of the Problem

RTI and ability level grouping is being used wide spread across the 1st grade of the School District. The question would be if data supports that this practice is beneficial to the 1st grade students.

Purpose of the Study

The purpose of the study is to determine if using Response to Intervention (RTI) with ability level grouping is beneficial in increasing DIBELS test scores in a 1st grade classroom.

Research Question

Is there a difference in student achievement between students taught with students not taught with RTI from the beginning of the year (BOY) to the end of the year (EOY), compared to students taught half of a year of RTI from the beginning of the year (BOY) to the end of the year (EOY), and a full year of RTI from the beginning of the year (BOY) to the end of the year (EOY)?

Null Hypothesis

There is no difference in student achievement between students taught with a full year of RTI, compared to students taught half of a year of RTI, and students not taught with RTI.
Anticipated Benefits of the Study

Deeper knowledge of RTI and ability level grouping, reflection upon current programs being utilized and how these programs can be improved, data to show how 1st grade students scored without RTI and ability level grouping, with only a partial year of RTI and ability level grouping, and a full year of RTI and ability level grouping and if scores improved or stayed the same with the same teacher.

Definition of Terms

PLC – Professional Learning Community - A professional learning community is an extended learning opportunity to foster collaborative learning among colleagues within a particular work environment or field. It is often used in schools as a way to organize teachers into working groups.

RTI – Response to Intervention - In education, response to intervention is a method of academic intervention used in the United States to provide early, systematic assistance to children who are having difficulty learning.

Ability level grouping – grouping students based on test scores so that they are with other students who scored at a similar scale.

Common Core – “The Common Core State Standards (CCSS) are the culmination of an extended, broad-based effort to fulfill the charge issued by the states to create the next generation of K-12 standards in order to help ensure that all students are college and career ready no later than the end of high school.” (Defining the Core, p. 1)

Ability level grouping – the practice of grouping students according to their level of academic skills.

DIBELS – Dynamic Indicators of Basic Early Literature Skills
Summary

The researcher planned to look at 3 years of data with the same teacher with only the RTI/Ability level grouping changing to see if there has been a change in achievement levels of the students when they had no RTI/ability level grouping, ½ year with 30 minutes of RTI/Ability level grouping, and finally with 1 full year of 30 minutes of RTI/Ability level grouping all in the area of reading.
REVIEW OF LITERATURE

Response to intervention (RTI) is a growing trend in schools across our country. As Kame’enui (2007) states “a new term and construct such as Responsiveness to Intervention frequently requires clarification and historical perspective, particularly in its currency, purpose, application, and reach (p. 6). This model is based upon a 3 Tier system where students are ability level grouped based upon need and given specific instruction (Burns, 2010).

Since the implementation of RTI a study in Florida has shown the reduction of students in grades K-3 that have been identified the special education programs. “There are two plausible explanations for these significant results. First, it is possible that use of the RTI instructional model has actually reduced the percentage of students with serious reading difficulties in these schools. Second, it is also possible that fewer students are being identified because teachers and schools are more confident in their ability to meet the needs of students without referring them for special education.” (Torgeson, 2009 p. 39). The RTI model is working for all students, but many aspects of RTI need to be put into place to ensure learning for students.

According to Burns (2010) a majority of students should be in Tier 1 where they receive and succeed with regular classroom instruction. If more than 20-25% of students are in a higher Tier then there will not be adequate support in schools to provide the specific instruction that is needed. Students needing support will be placed into Tier 2 where they receive specific instruction in the needed areas. No more than 5% of the students in Tiers 1 & 2 should be moved into Tier 3.

Another way to look at the Tiers would be to put students into 1 of 5 groups (Brulles, 2012). Brulles (2012) put students into the following 5 groups: Group 1 – All students
identified as gifted, Group 2 – High Average, described as “highly competent and productive students who achieve well”, Group 3 – Average, “students who achieve in the middle range of grade level expectations”, Group 4 – Low Average, “students who may score slightly below grade level but who can achieve at grade level with some support, Group 5 – Far Below Average, “students who struggle in most subject areas and score significantly below proficiency levels” (p. 3)

To implement Tiers or Groups it is generally understood that research based instructional practices must be put into place such as provided high quality initial instruction, using reliable screening and progress monitoring, and providing interventions (Torgersen, 2009). Tier 2 and 3 should be using “explicit and systematic instruction” (Burns, 2010), small group of 3-6 students, provide direction instruction on foundational reading skills, focus on underlying or building block skills, closely monitor progress, teaching specific skills, and utilizing immediate feedback to students.

Training teachers and providing professional development is also a key component to an RTI model. Teachers should receive instruction on differentiating instruction for all students, gifted, special education, and general education students alike to ensure understanding of characteristics and learning need of each child. When looking at schools who show continuous improvement, “teachers and school leaders have been trained to use the resulting data to help make instructional decisions for students. Schools have made progress in learning how to do this, but it remains an area of continuing need for improvement.” (Torgensen, 2009 p. 38) This training allows teachers the tools needed to instruct students in the research based practices, as well as how to collect and analyze data that is collected from these practices.
“RTI is a promising practice that already has positively influenced the lives of countless children. If we can take what research has already taught us, develop ways to directly translate that research into practice, and continue to evolve our practices based on cutting edge research, then RTI will be the accepted, ongoing approach to instruction rather than just another fad.” (Burns, 2010 p. 1)

Brulles (2012) states that schools need to provide challenging learning environment for all students, but to do this the RTI model allows us to take the individual students and give them the tools that they need to be successful in every aspect of their curriculum. RTI sets schools up for the highest level of achievement for all students.
RESEARCH AND DESIGN METHODOLOGY

Research Design

The researcher looked at the DIBELS Scores of the 1st grade classes for the 2010-2011 school year, 2011-2012 school year, and 2012-2013 school year to see the difference in achievement over these 3 years with the addition of RTI/ability level grouping for 30 minutes of supplemental reading time daily. The independent variable is the grouping of the students. The dependent variable is the scores that each individual student receives on their DIBELS assessment.

Study Group Description

The group in this study is a rural community of 1st grade students. The students were placed in the first grade classroom without the teachers input or the input of the researcher and at the time of placement this paper was not a factor and was not considered in the placement of students. Her class has a mix of both regular education and special education students. She has a mix of boys and girls in the class. Her class sizes range from year to year, but stay within the 20’s range. Each student is between the ages of 6-7. The class is a mix of mid to low income students. Of the students at this elementary school 56% are receiving free/reduced lunch, 46% are female and 54% are male. The ethnicity breakdown is as follows in the first grade 1% Asian, 3% Hispanic, 1% American Indian, 6% Multi-Racial, and 89% Caucasian/White.
Data Collection and Instrumentation

DIBELS tests scores of a 1st grade classroom from a rural Midwestern elementary school were used to identify Nonsense Word Fluency (NWF) scores for each child for the 2011-2012 and 2012-2013 school years.

Statistical Analysis Methods

An ANOVA was conducted to find if there is a significant difference in DIBELS Nonsense Word Fluency test scores based on half a year with 30 minutes RTI and a full year of 60 minutes of RTI. The source was broken into three categories: 2010-2011 school year, 2011-2012 school year and 2012-13 school year. The mean, , and p-value were concluded from this test. The Alpha level was set at 0.05 to test the null hypothesis: The null Hypothesis was: There is no difference in student achievement between students taught with a full year of RTI, compared to students taught half of a year of RTI, and students not taught with RTI.
**FINDINGS**

**One-way ANOVA: G BE versus GROUP**

Source DF SS MS F P
GROUP 1 2 14504 7252 8.97 0.001
Error 44 35570 808
Total 46 50074

S = 28.43  R-Sq = 28.97%  R-Sq(adj) = 25.74%

Individual 95% CIs For Mean Based on Pooled StDev
Level N Mean StDev  
1 13 10.15 23.66  
2 16 53.63 26.60  
3 18 43.39 32.75  
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0        20        40        60

Pooled StDev = 28.43

Because of the p value of 0.001 the null hypothesis is rejected and there is significant gain in student achievement from the beginning of the year to the end of the year with RTI. For group one the mean is 10.15, group 2 the mean is 53.63, and group 3 the mean is 43.39. Group 1 made very little gain and had no RTI, and while group 3 had a gain of 43.39 it had more RTI with a full year of RTI than group 2 who had a mean of 53.63 and only half of a year of RTI.

**One-way ANOVA: EOY versus GROUP**

Source DF SS MS F P
GROUP 2 2 2373 1186 1.09 0.344
Error 44 47772 1086
Total 46 50145

S = 32.95  R-Sq = 4.73%  R-Sq(adj) = 0.40%

Individual 95% CIs For Mean Based on Pooled StDev
Level N Mean StDev  
1 14 82.86 32.31  
2 16 88.63 29.57  
3 17 71.94 36.30  
---+---------+---------+------
60        75        90        105
Pooled StDev = 32.95

Because of the p value of 0.344 is larger than 0.05 there is not a significant difference. Group 1 had a mean of 82.86, group 2 had a mean of 29.57, and group 3 had a mean of 36.30. It is important to note that the first group started with very high scores and made very little gains over the year. Group 1 made very little gain and had no RTI, and while group 3 had a mean of 71.94 it had more RTI with a full year of RTI than group 2 who had a mean of 88.63 and only half of a year of RTI.
CONCLUSIONS AND RECOMMENDATIONS

Upon examining the data above it was found that the implementation of an RTI program made a significant difference for the 1st grade students in both the 2011-2012 and 2012-2013 school years compared to the 2010-2011 school year where there was gain but not a significant amount. Both school years showed significant gain in the amount of sounds per minute each child was able to read. By ability level grouping and providing additional, specific RTI instruction as a whole the children were able to make significant gains. The p value of the gains of .001 shows that the gains are very significant.

It is recommended that RTI be in place for both reading and mathematics for a minimum of 30 minutes per day for all grade levels Kindergarten through 8th grade.

The conceptual underpinnings states that it is believed that RTI will raise achievement, and this study proves that the 2 years in which RTI was implemented there were much larger gains in student achievement that in the 2010-2011 school year where there was no RTI implementation. This research shows that RTI is effective in a 1st grade classroom, and should continue to be implemented on a wide spread basis.
REFERENCES


