THE INFLUENCE OF THE “RESPONSE TO INTERVENTION” (RTI) PROGRAM, SUCCESSMAKER ON PRE AND POST STUDENT READING COMPREHENSION SCORES IN 6th GRADE

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Submitted in Fulfillment of Graduation Requirements for

61-723 WRITING & INTERPRETING EDUCATIONAL LITERATURE AND STATISTICS
AND 61-724 FIELD STUDY

March 4, 2012
ABSTRACT

This study analyzed the implementation of Tier 2 Response to Intervention (RtI) strategies on 6th grade reading scores. The purpose was to determine if students increased reading comprehension after receiving the SuccessMaker intervention in comparison to students that did not receive the SuccessMaker intervention. The study group consisted of 84 6th grade students in a Midwest suburban school district. The analysis of the results showed that there was no significance between students receiving an intervention and students not receiving an intervention based on students’ STAR Reading grade-level equivalence score. Therefore, the null hypotheses were accepted. However, it is my recommendation that students are provided with interventions, as the research conducted supports providing students with small group, differentiated instruction.
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CHAPTER ONE
INTRODUCTION TO THE STUDY

Introduction

The study examines the reading comprehension scores of 6th grade students receiving a Tier 2 intervention to students not receiving an intervention. The goal is to determine the effectiveness of the SuccessMaker program. Reading comprehension scores were obtained from the STAR reading assessment.


Background, Issues, and Concerns

I believe the ability to read is viewed as an extremely important skill. Students that read below grade-level often struggle in multiple curricular subjects (Kindig, 2006). Schools should create successful readers and provide differentiated support for struggling readers. Unfortunately, many students are non-readers or reading below grade level. Not all of these students are receiving interventions. Due to lack of funding, resources, and teachers, interventions are not given to all low readers.

Students in the district are assessed three times per year using the online STAR Reading assessment program. If students score at or below the 40th percentile on the August STAR Reading assessment, they are considered to be at-risk. Students with similar reading scores are
given a variation of support throughout the school day. Some students are receiving small group interventions, while other students are only participating in whole group instruction. Many students “on the bubble” or close to a 40\textsuperscript{th} percentile on the August 2010 STAR Reading assessment are not being supported by Tier 2 interventions.

*Practice under Investigation and/or Policy to be Informed by Study*

Information gained regarding the impact of the SuccessMaker program on grade-level equivalence scores from this study will be presented to the school’s administration, RtI team, and communication arts cadre. Professional development days can also use the information while providing Response to Intervention (RtI) training.

*Conceptual Underpinnings*

Small-group, differentiated instruction enhances comprehension skills. “In differentiated classrooms, all students are engaged in instruction and participating in their own learning. Students know that learning is a process and they know their own strengths and areas in need of improvement” (Anderson & Algozzine, 2007, p. 52). RtI is a way to differentiate instruction in schools. It provides early intervention to students at risk for failure (Fuchs & Fuchs, 2006). Through the RtI model, students receive high-quality instruction that matches their needs in a tiered model of support, frequent monitoring of progress, and data-based decision making (Sansosti, Telzrow, & Noltemeyer, 2010).

Tier 1 interventions consist of the core instruction. Approximately 80-85\% of students meet benchmark levels of intervention without the need for more intense intervention. Tier 2 interventions are in addition to the general curriculum. They are applied in small group settings
for students not making adequate progress. Approximately 15-20% of students in a school are expected to be in this category. Tier 3 interventions are intensive and target students’ skill deficits. Approximately 5-10% of students are expected to need intensive interventions per school (Mack, Smith, & Straight, 2010).

The conceptual underpinning of this research project revolves around the comparison of sixth-grade “on the bubble” students’ August 2010 STAR Reading grade-level equivalent scores and their May 2011 STAR Reading grade-level equivalent scores and the impact on the Tier 2 intervention, SuccessMaker.

Statement of the Problem

There is a lack of evidence relating reading scores to RtI strategies amongst 6th grade students as measured by the online STAR Reading assessment.

Purpose of the Study

The purpose of this study was to determine how and if 6th grade students increased their reading comprehension scores after receiving RtI strategies. In order to do this, students of similar STAR scores receiving an intervention were compared to students not receiving an intervention.

Research Questions

RQ1: Is there a significant difference between student grade-level equivalent gain for at-risk students participating in the SuccessMaker program and students not participating in the SuccessMaker program as measured by the online STAR Reading assessment in August 2010?
RQ2: Is there a significant difference between student grade-level equivalent gain for at-risk students participating in the SuccessMaker program and students not participating in the SuccessMaker program as measured by the online STAR Reading assessment in May 2011?

Null Hypotheses

Ho1: There is no significant difference between student grade-level equivalent gain for at-risk students participating in the SuccessMaker program and students not participating in the SuccessMaker program as measured by the online STAR Reading assessment in August 2010.

Ho2: There is no significant difference between student grade-level equivalent gain for at-risk students participating in the SuccessMaker program and students not participating in the SuccessMaker program as measured by the online STAR Reading assessment in May 2011.

Anticipated Benefits of Study

The benefits of this study will be to know if there is a relationship between at-risk students participating in the Tier 2 intervention, SuccessMaker, and the increase in grade-level equivalency reading scores as measured by the online STAR Reading assessment. If there is data that shows benefit to having students participate in the SuccessMaker program, it may encourage the district to use funding for more SuccessMaker licenses. This would enable more at-risk students to participate in the Tier 2 intervention.

Limitations and Delimitations

A limitation of this study is that teachers provide reading instruction to at-risk students in core classes. Students participating in the SuccessMaker program receive various types of
reading instruction from different teachers. Some communication arts teachers use independent/self-selected instruction and others use novel-based instruction in addition to direct instruction. This may result in grade-level equivalent scores increasing due to core teachers’ instruction and not necessarily as a direct result of the SuccessMaker program. The sample size is another possible limitation in the study. This study focuses on 84 students. A third limitation could be variation of vocabulary and questions used in the online STAR Reading assessment program. This makes the assessment not entirely standardized.

**Definition of Terms**

Response to Intervention (RtI): A method of academic intervention created to provide intense instruction to at-risk students.

Tier 1: The implementation of the core classroom curricula.

Tier 2: Supplemental instruction to support students’ specific needs.

SuccessMaker: A program created by Pearson to provide elementary and middle school learners with adaptive, personalized paths for mastery of essential reading and math concepts.

Online STAR Reading Assessment: A program created by Renaissance Learning to determine students’ reading achievement. The online test consists of 25 primarily vocabulary identification questions. The majority of students are given 45 seconds to answer each question. Students that have an individualized instructional program (IEP) or extended time accommodations may receive 90 seconds to answer each question.
At Risk-Students: Students reading at or below the 40\textsuperscript{th} percentile as measured by the baseline August 2010 online STAR Reading assessment.

Summary

This study will uncover if there is a significant difference between at-risk students receiving the SuccessMaker intervention and at-risk students not receiving an intervention by comparing students’ STAR Reading grade-level equivalent gain from August 2010 to May 2011. Results could be used to influence the district’s funding decisions when contemplating additional RtI resources for at-risk students.
CHAPTER 2

REVIEW OF LITERATURE

Overview

Teachers are expected to meet the needs of all students in their classroom. This means, instruction must be differentiated to support each individual child. Since children learn at different rates and in a variety of ways, interventions are often implemented to support struggling students. Response to Intervention programs allow teachers to provide supplemental reading instruction. “Response to intervention (RTI) is a multitiered system for struggling learners that provides increasingly intense levels of academic interventions and assessment” (Byrd, 2011, p. 33). In a 2011 survey, over 80% of elementary schools were fully implementing RtI (Spectrum K12, 2011).

History

RtI was initially created as an alternative assessment model for pinpointing learning disabilities. In 2002, the President’s Commission on Excellence in Special Education made a formal recommendation that RtI be put into practice in order for students to be identified based on intervention progress (Dunn, 2010, p. 22). Today, RtI has advanced into a general education model for instruction (Bursuck & Blanks, 2010). Most schools that participate in RtI programs include three tiers of instruction. The tiers are needed to differentiate instruction successfully. Tier 1 usually refers to the core classroom curricula. Tier 2 provides additional instruction to students that have shown specific needs in Tier 1 instruction. The most intensive instruction occurs during Tier 3. This instruction is specialized and may include special education.
Approximately 90-95% of students are expected to be successful in Tier 1 or Tier 2 instruction (Hoover & Love, 2011).

“Identifying children at risk for reading difficulties and providing timely intervention is of critical importance of our society” (Lipka & Siegel, 2010, p. 963). At risk students are recognized and placed in an intervention through data collection. Many school districts have created a standard protocol approach to RtI, which uses a standardized criterion to determine at-risk status. This can help reduce decision making on school personnel (Dufrene, Reisner, Olmi, Zoder-Martell, McNutt, & Horn, 2010). Progress monitoring is embedded in RtI. Through ongoing assessments, students move throughout the tiers if they show the necessary improvement. An important aspect of RtI is the potential movement back to the regular classroom setting (Freidman, 2010).

Programs

Schools utilize a variety of programs when implementing RtI. Corrective Reading is a program that is commonly found in Tier 3 interventions. This structured, scripted program is intended to be implemented four to five times a week. Students are often in groups of four to five. "Corrective Reading is designed to promote reading accuracy (decoding), fluency, and comprehension skills of students in grades 4-12 who are reading below their grade level” (What Works Clearinghouse, 2010).

The SuccessMaker program, created by Pearson, is often used in Tier 2 interventions. This program is online and helps students master reading and math skills while interacting on a one-to-one basis. The online program also tracks students’ progress and creates reports. This
provides beneficial information for the teachers, parents, and students. “The program presents variable levels of sub-skills practice through vocabulary enhancement, cloze tests, sentence completion and comprehension activities” (Underwood, 2000, p. 139).

The SuccessMaker program has also been proven to raise students’ self-esteem. Presland and Wishart (2004) found the program was motivating to use. Their findings showed motivation occurred through students’ awareness that they are making progress, student’s ability to get high scores for their work, and students’ perceptions of associated beliefs upon their English, Spelling, Reading, and Mathematics work (Presland & Wishart, 2004).

*Special Education Eligibility*

The RtI model can serve as an effective structure to discover and prevent learning and behavior problems for students. “If RtI is properly implemented, it should reduce unnecessary referrals and placements into special education, and increase the accuracy of special education eligibility decisions” (Hoover, 2010, p. 289). Before a student is formally referred for special education, instructional efforts must be demonstrated. RtI allows a framework for these instructional efforts.

“The shift moves practice away from the traditional model of waiting for students to qualify for special education before serving them to one of intervening immediately to prevent developmental delays and challenges from becoming disabilities” (Greenwood, Bradfield, Kaminski, Linas, Carta, & Nylander, 2011). This differs from former pre-referral models. RtI emphasizes early intervention instead of waiting for students to fail. In addition, special education placement is not restricted to the IQ-achievement discrepancy model. The focus is on
the rate of progress; not one standardized test score (Hoover, 2010). “RTI replaces the discrepancy approach used to determine special education eligibility for a learning disability” (Legere & Conca, 2010, p. 33).

Benefits

The RtI framework has benefits at the elementary and middle school level. RtI provides teachers with data that enables them to respond to students’ learning needs and decide when their needs for instructional support go beyond the capacity of general education (Vanderheyden, 2011). Using this data, students are provided with an intervention that meets their needs. Vaughn, Cirino, Wanzek, Wexler, Fletcher, Denton, Barh, Romain, and Francis (2010) found that students who participated in the Tier 2 intervention showed gains on measures of decoding, fluency, and comprehension (2010, p. 4).

Little (2012) summarizes the program’s goals by stating: “RtI has two overarching goals: (1) to deliver evidence-based instruction and interventions to improve student learning and (2) to collect information regarding students’ responses to those interventions, which serve as a basis for continued interventions or program placements” (2012, p. 71). RtI provides students with differentiated instruction that helps to enhance their reading skills. This enables at-risk students to receive instruction on their ability level. RtI can benefit students at the middle school level. “When students transition from elementary school to middle school, in theory, an analogous RTI model should be implemented, catching sixth graders who are far below and below basic levels in literacy skills” (Graves, Brandon, Duesbery, McIntosh, & Pyle, 2011). This helps further prepare students for high school.
Summary

“Response to Intervention (RTI) is a framework that may lead to better teaching and learning through its integration of instruction, intervention, and assessment” (Johnson & Smith, 2011, p. 24). Originally, RtI was put into schools to serve as a process for Special Education eligibility. Today, many schools implement RtI to enhance learning for all at-risk students. RtI is a tiered program that places students in groups based on their specific needs. Data is collected to determine students’ placement among the tiers. Throughout the school year ongoing assessments are analyzed to determine if a student should remain in their tier or move to another tier. Based on the findings of this research alone, RtI is a beneficial program.
CHAPTER 3

RESEARCH METHODOLOGY

Problem and Purposes Overview

A student not reading on grade-level is a problem. These students are often provided with a structured intervention to help increase grade-level equivalency scores. This study was conducted to determine if an additional reading intervention has an impact on grade-level equivalency scores in students that scored within the 15th to 35th percentile as measured by the August 2012 STAR Reading assessment.

Field Study Methods

Research design

Two independent t-test analyses of differences between the two groups (students receiving an intervention and students not receiving an intervention) were conducted. Test scores from 6th grade students scoring between the 15th percentile to the 35th percentile on the August 2012 STAR reading assessment will be used. Test scores were received from central office.

Weaknesses in the study include: the small size of the study group; instructional strategies implemented by individual reading teachers outside of the intervention which could also impact scores, and the questions/vocabulary used within the online STAR Reading assessment program can differ each time a student takes the test. This makes the test not entirely standardized.
Variables used in the study.

The independent variables used in the t-tests will include status of the student indicated as 1: intervention, or a 2: no intervention. The dependent variables used in one of the t-test will be students’ August 2010 STAR reading test scores. The dependent variables used in the other t-test will be students’ May 2011 STAR reading test scores.

Research questions

RQ1: Is there a significant difference between student grade-level equivalent gain for at-risk students participating in the SuccessMaker program and students not participating in the SuccessMaker program as measured by the online STAR Reading assessment in August 2010?

RQ2: Is there a significant difference between student grade-level equivalent gain for at-risk students participating in the SuccessMaker program and students not participating in the SuccessMaker program as measured by the online STAR Reading assessment in May 2011?

Null Hypotheses

Ho1: There is no significant difference between student grade-level equivalent gain for at-risk students participating in the SuccessMaker program and students not participating in the SuccessMaker program as measured by the online STAR Reading assessment in August 2010.

Ho2: There is no significant difference between student grade-level equivalent gain for at-risk students participating in the SuccessMaker program and students not participating in the SuccessMaker program as measured by the online STAR Reading assessment in May 2011.

Study group
The study group consisted of 84 sixth grade students in a school district located in a suburb in Kansas City, Missouri containing: nine K-5 elementary schools, one sixth grade center, two 7-8 middle schools, and two 9-12 high schools. The Title 1 school where the study was conducted contains about 800 students total. The study group was assessed two times using the STAR Reading program. Within the study group, students were classified as receiving an intervention and not receiving an intervention.

Data collection and instrumentation utilized.

The online STAR Reading assessment used by the district was used to collect data. The data from this study compares grade-level equivalency reading growth in the August 2010 and May 2011 of 84 students receiving an intervention and students not receiving an intervention. The STAR Reading assessment consists of 25 timed multiple-choice questions that pertains to a short passage. Students are asked to fill-in a missing vocabulary word or answer a recall comprehension question. The U.S. Department’s National Center for Response to Intervention claims that STAR Reading shows “consistent evidence” of being a reliable form of monitoring student progress in a recent study (U.S. Department of Education, 2010).

I believe the STAR Reading assessment has many strengths. It is beneficial that the test is given to all the students K-8 within the district to measure reading growth. This allows students, teachers, and parents to see patterns. The test questions also alter to match a students’ reading ability to more accurately determine a child’s level. However, I can also see weaknesses with the test. A student is given 25 questions when taking the test. Since a student often takes the assessment three times per school year, it can be difficult to determine if the actual grade-level was determined or a child’s background knowledge in reference to the 25 questions.
Unless the test is given multiple times to each child, patterns may be hard to see. Also, students can have a bad test day. This would skew the STAR Reading assessment results. Therefore, the actual reading-level determined would be incorrect.

*Data analysis strategies*

Data was obtained from the school district’s central office. ASP Software was then used to conduct two independent t-test analyses of differences between the group of students receiving an intervention and the group of students not receiving an intervention (Blackford, 1999). One t-test was comparing August 2010 STAR Reading assessment scores. The other was to compare May 2011 STAR Reading assessment scores. This information was used to determine if there is a significant difference in grade-level equivalency scores as measured by the online STAR Reading assessment in students receiving an intervention and students not receiving an intervention.

*Summary*

This study will be used to determine if there is significance between students that are receiving a reading intervention and students that are not receiving a reading intervention. This will be determined through analyzing students’ STAR Reading grade-level equivalence scores when looking at data collected in the August 2010 and May 2011. After data is collected, ASP Software will be used to conduct two independent t-test analyses of differences between two groups (Blackford, 1999).
CHAPTER FOUR:

PRESENTATION AND ANALYSIS OF DATA

Problem Statement

The problem is that we do not have enough information about the impact the SuccessMaker reading intervention has on grade-level equivalent reading levels of at-risk sixth grade students as measured by the online STAR Reading assessment.

Findings by Data

Two independent t-test analyses of the differences between a group of at-risk students receiving the SuccessMaker intervention and a group of at-risk students not receiving the SuccessMaker intervention was conducted using ASP Software (Blackford, 1999). Students’ August 2010 and May 2011 STAR Reading grade-level equivalence scores were used to determine if there is significance between students that are receiving the SuccessMaker intervention and students that are not receiving the SuccessMaker reading intervention.

Analyzed data is presented below with each posed research questions in this study.

RQ1: Is there a significant difference between student grade-level equivalent gain for at-risk students participating in the SuccessMaker program and students not participating in the SuccessMaker program as measured by the online STAR Reading assessment in August 2010?

Table 1:

HYPOTHESIS: Mean X = Mean Y

FallSTARscores.GE BROKEN DOWN BY Intervention
VARIANCES ARE ASSUMED EQUAL
X = s.GE(Intervention=1)
Y = s.GE(Intervention=2)

SAMPLE MEAN OF X = 4.61176
SAMPLE VARIANCE OF X = 0.0271301
SAMPLE SIZE OF X = 34
SAMPLE MEAN OF Y = 4.516
SAMPLE VARIANCE OF Y = 0.354024
SAMPLE SIZE OF Y = 50

MEAN X - MEAN Y = 0.0957647
  t = 0.913388
  D. F. = 82
  P-VALUE = 0.363717
  P-VALUE/2 = 0.181858
  SD. ERROR = 0.104846

RQ2: Is there a significant difference between student grade-level equivalent gain for at-risk students participating in the SuccessMaker program and students not participating in the SuccessMaker program as measured by the online STAR Reading assessment in May 2011?

Table 2:

HYPOTHESIS: Mean X = Mean Y

SpringSTARScores.GE BROKEN DOWN BY Intervention

VARIANCES ARE ASSUMED EQUAL
X = s.GE(Intervention=1)
Y = s.GE(Intervention=2)

SAMPLE MEAN OF X = 5.27941
SAMPLE VARIANCE OF X = 0.351988
SAMPLE SIZE OF X = 34
SAMPLE MEAN OF Y = 5.232
SAMPLE VARIANCE OF Y = 0.447935
SAMPLE SIZE OF Y = 50

MEAN X - MEAN Y = 0.0474118
  t = 0.333379
D. F. = 82
P-VALUE = 0.739699
P-VALUE/2 = 0.36985
SD. ERROR = 0.142216

Summary

No significance was found between students receiving the SuccessMaker intervention and students not receiving the SuccessMaker intervention. Therefore, all null hypotheses were accepted.
CHAPTER 5
OVERVIEW, FINDINGS AND RECOMMENDATIONS

Overview

This study analyzes the significance of the SuccessMaker intervention program and the impact on a student’s STAR Reading score when comparing August 2010 and May 2011 data. The study looked for the impact of the intervention on at-risk participants.

Restatement of the Purpose

The district has been implementing the RtI in elementary and middle schools. Because some students are receiving interventions, there is a need to determine if there is a difference between students’ reading skills receiving an intervention and not receiving an intervention as measured by the online STAR Reading test.

Summary of Research Methods

This study was conducted using 84 pieces of STAR Reading data from a sixth grade center in August 2010 and May 2011. The study was completed to compare the impact of the RtI intervention, SuccessMaker, on a student’s STAR Reading grade-level equivalence scores. After data was gathered, ASP Software was used to conduct two independent t-test analyses (Blackford, 1999).

What was Learned

It was determined that there is no significance between the reading level of students receiving an intervention and students not receiving an intervention based on the STAR Reading assessment. Therefore, all null hypotheses were accepted.

Recommendations
Even though all null hypotheses were accepted, it is still my recommendation that schools provide at-risk students with structured reading interventions. Students reading below grade-level need to receive reading instruction that meets their needs. RtI is a way to provide small group instruction to these at-risk students. I believe over time that reading interventions will help improve students’ reading level.

Summary

This study was conducted to determine if there was significance between the STAR Reading grade-level equivalent scores of students receiving the SuccessMaker intervention and students not receiving the SuccessMaker intervention. 84 pieces of data was attained from sixth graders in August 2010 and May 2011. It was determined that there is no significance between students STAR Reading grade-level equivalent scores receiving the SuccessMaker intervention and students not receiving the SuccessMaker intervention. All null hypotheses were accepted. However, it is still my recommendation that schools provide small group interventions for at-risk students in order to enhance reading skills and comprehension.
References


