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# An Analysis of the Implementation and Effectiveness of Successmaker Reading on Closing the Achievement Gap Through a Separate Class Middle School Reading Intervention

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# AN ANALYSIS OF THE IMPLEMENTATION AND EFFECTIVENESS OF SUCCESSMAKER READING ON CLOSING THE ACHIEVEMENT GAP THROUGH A SEPARATE CLASS MIDDLE SCHOOL READING INTERVENTION

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DEDICATION

For Anthony, Joshua and Taylor, each equally my pride, my joy and my love.

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## ABSTRACT

The purpose of this study was to determine if SuccessMaker Reading had an effect on at-risk students when used with a Language Arts course. SuccessMaker Reading is a web-based system that provides reading skills practice that align with state standards. The sample of this study consisted of seventh (2019) and eighth (2018) grade classes from a Midwestern suburban middle school district during the fall of the 2017-2018 school year.

At-risk Language Arts students who have not achieved proficiency in reading were enrolled in SuccessMaker Reading. This study analyzed if SuccessMaker Reading had an effect on growth on the NWEA-MAP winter reading assessment, MyPerspectives pre and post assessments, and a student's Language Arts course grades. A comparison was performed on students who were not enrolled in SuccessMaker Reading. This study was a quasi-experimental study using a pretest-posttest design.

The results of this study indicated that SuccessMaker users closed the achievement gap on the NWEA-MAP reading assessment by 31.0%. SuccessMaker users had higher mean composite/percent reading growth, slightly higher means on the MyPerspectives post assessment and higher mean quarter and semester grades than non-SuccessMaker users. There was statistical significance with NWEA-MAP winter reading growth, grade, gender, race, and time spent or incremental growth on SuccessMaker Reading.

According to the 2016 Illinois School Report Card, only 38% of reading students met or exceeded the goal of the Partnership for Assessment of Readiness for College and Careers (PARCC) exam. This past 2017 school year only 36% of students met or exceeded the reading goal for PARCC (Illinois School Report Card, 2017). If students are to prepare for college and career the percentage of students meeting or exceeding the goal established by PARCC must improve. Educators need proven interventions to assist students in learning the skills necessary to meet the outlined criteria of proficiency.

# CHAPTER I

# INTRODUCTION

## Introduction

In 2012, the Illinois State Board of Education raised the lowest possible score (cut score) needed for a student to be considered proficient for the Illinois Standards Achievement Test (ISAT). In Illinois, students would now be held to higher criteria to be considered average. Once the cut score and rigor of the test was raised, the overall passing rate decreased from 82.1% in 2012 to 61.9% in 2013 for the math, reading, and science portions of the ISAT assessment (Bock, 2013). Students were not meeting the new expectations to be considered college or career ready.

In 2010, Illinois adopted the new national learning standards called the Common Core State Standards (CCSS), which defined what English and math skills students would learn at each grade level. The CCSS were created to ensure that students had the necessary skills to succeed in college, career, and life (Common Core State Standards Initiatives, 2017). Students were required to meet proficiency in the K-12 standards by graduation of high school.

The CCSS for reading consists of key ideas and details, craft and structure, integration of knowledge and ideas, and range of reading and level of text complexity (Common Core State Standards Initiatives, 2017). The new learning standards tied reading to math in ways that required proficiency in reading as a prerequisite to success

in math. Schools were forced to keep pace with raised expectations to prepare students for college and beyond.

In 2013, about 20% of the ISAT assessment questions aligned to the CCSS (Illinois State Board of Education, 2017). Schools did not fully implement the CCSS into evaluation and curriculum in the 2013-2014 school year. Students across the state struggled to demonstrate proficiency when assessed by these new standards thus widening the achievement gap even further between students of color and their White peers (Illinois State Board of Education, 2017). This research examined the effect of implementing SuccessMaker Reading as a separate class intervention in addition to a Language Arts course and examined whether White, Black or Latino students' scores were effected.

## Public Law PL 107-110

Public Law PL 107-110, the No Child Left Behind Act of 2001 (2013) was passed to increase school and teacher accountability, improve learning goals, provide research-based best practices and increase parent choice of schools. Schools were responsible for ensuring that all students were 100% proficient in reading and math to close the academic and the achievement gap between economically disadvantaged students, students from different economic, ethnic, and racial backgrounds as well as students with disabilities (Yell, 2006). Strategic planning was required by schools to ensure all students had equity of opportunity to a quality education. The No Child Left Behind Act required schools to increase achievement in reading each year and reach 100% reading proficiency by 2014. A critical piece of the solution to ensuring that students were 100% at reading proficiency

involved exploring interventions to bridge the gap between where students are to where they need to be with the new CCSS.

## Response to Intervention (RtI)

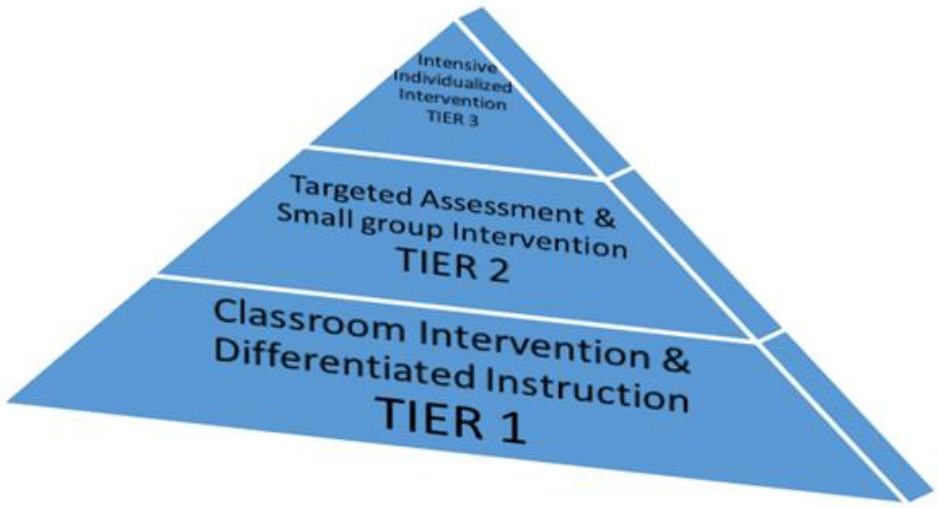
According to Edmonds et al., (2009), adolescents with reading difficulties benefit from explicit and systematic intervention organized around their instructional needs. In 2004, an intervention model was developed in response to struggling students in schools across the nation. The official definition, Response to Intervention (RtI) falls under the larger umbrella of Multi-Tiered Systems of Support (MTSS) and is a tiered service model that,

> identifies students who are struggling in the classroom to remediate academic deficits, distinguishes between students who are behind due to a history of poor instructional experiences, and those in need of special education services for remediation of an actual learning disability. (Moors, Weisenburgh-Snyder, & Robbins, 2010, p. 227)

The RtI model requires that educators provide support for students in all core subject areas as all students are entitled to the rigorous instruction necessary to compete in society.

All students deserve access to high-quality education (Mellard, McKnight, & Jordan, 2010). Schools must find successful ways to educate all students. This quasi-experimental study evaluated a Tier 2 intervention in a Midwestern suburban middle school to determine if there was an impact on low-performing reading students and if the scores of White, Black, and Latino students were affected differently. Each level of the

RtI model provides different responses to implement for students based on their tier, as indicated in Figure 1 below.




RtI model displaying the three tiers of intervention as students move up based on their need for interventions. All students start at Tier 1.

Adapted from "Reading Plus: The Perfect Solution for Kentucky and Ohio RtI Programs," by Reading Plus (2017, May 23). Retrieved from https://academicedge.com/news/reading-plus-perfect-solution-kentucky-ohio-rti-programs/

*Figure 1*. RtI 3-Tiered Model

There are three tiers in the RtI model, with each tier providing "increasingly intense student interventions" (Fletcher, Lyon, Fuchs, & Barnes, 2007, p. 1). Each tier is designed to assist struggling learners and provide the necessary tools to be successful in the classroom. Tier 1 interventions represent 80% of the student population, Tier 2 represents 15%, and Tier 3 represents 5% (Mellard et al., 2010).

According to Reschly (2005), the primary differences in the tiers of instruction are with "intervention intensity and measurement precision" (p. 511). This structure

indicates that each level increases the depth of strategies used to meet the needs of students. Students move through the tiers based on need and response to applied interventions.

The Institute of Educational Sciences' Practice Guide Report (2009), contain five components identified as essential elements of an RtI model. The model includes: (1) screening all students, (2) monitoring students who are not meeting the benchmark, (3) differentiating instruction, (4) providing Tier 2 small group sessions, and (5) providing Tier 3 intensive small group interventions. The availability of a scientifically based system of strategies is relevant to all educators, along with a plan for intervening with students who do not respond to instruction (Daly, Martens, Barnett, Witt & Olson, 2007). The use of these five intervention components are indicators of a school districts focus on student success.

Interventions have become prominent across the United States since the adoption of the CCSS. Thousands of adolescents across the world are participating in a wide range of intervention efforts designed to improve their literacy achievement (Calhoon, Scarborough, & Miller, 2013). Students are now required to demonstrate competency by analyzing, comprehending and critiquing complex texts and it is imperative that educators can address the varying skill levels that students bring to the classroom.

According to Hartry, Fitzgerald, and Porter (2008), a variety of tools are needed to assist in these efforts. These efforts include additional classes during the school day, afterschool programming opportunities, before school programs, peer tutors, computer interventions (Soper & Marquis-Cox, 2012).

**At-Risk Students**

At-risk refers to students who have difficulty achieving the basic level of proficiency. According to the American School Counselors Association (2006-2008), at-risk students refers to students who could potentially drop out of school or engage in self-destructive behaviors that interfere with academic success. Behaviors including absenteeism, performing below academic potential or participating in activities that may be harmful to self and others such as substance abuse, threats, and intimidation, and physical violence. At-risk students with deficient skills are more likely to stay at their current skill level and not improve unless they receive additional support (Fletcher & Lyon, 1998). For this study, *at-risk students* refer to students who are performing below academic potential and are not achieving basic levels of proficiency in reading and are not at grade level.

For this study, at-risk reading students were placed into Pirate Time (reading intervention) whose name is adapted after the school mascot the Pirate. The reading intervention is an additional class period using SuccessMaker Reading to assist students in meeting their reading goal on the *Northwest Evaluation Association Measures of Academic Progress* (NWEA-MAP) reading assessment. A Rasch Unit Scale score (RIT) is used to identify at-risk reading students. Students at or below the 50$^{th}$ percentile are considered at-risk for the purposes of this study. RIT are stable, equal interval scales that use individual item difficulty values to measure student achievement independent of grade level (NWEA.org, 2017). The 50$^{th}$ percentile is considered an average score.

Nationally, students identified for this study have deficient skills in a combination of reading areas (i.e., vocabulary acquisition and use, literature, and informational text).

## Setting for the Intervention

Since 2008, a Midwestern middle school on average has not met the 50th percentile in reading (see Table 1). To ensure students are college and or career ready, administrators and teachers needed to find a way to deliver relevant, differentiated instruction based on student need. During the 2015-16 school year, this Midwestern middle school adapted the *MyPerspectives* reading curriculum published by Pearson. "*My Perspectives*" is aligned to the CCSS. *MyPerspectives* reading is a student-centered curriculum with activities that encourage students to read and respond using conversation and writing. MyPerspectives promotes critical thinking and higher ordered decision making skills. The curriculum design models the gradual release method with a focus on student engagement. The gradual release model provides teachers with an instructional framework for moving from teacher knowledge to student understanding and application (Fisher, 2008). The instructional format facilitates differentiation based on student need and emphasizes a combination of small group, whole group and individual practice.

In this Midwestern middle school, students were placed in one of three class levels (i.e., regular, advanced or honors) during a 90-minute literacy block. Regular classes were designed for students below the 50th percentile on NWEA-MAP, advanced classes were designed for students within the 50th and 79th percentile on NWEA-MAP, and honors classes were designed for those students who score at or above the 80th percentile on the NWEA-MAP end of year data. The 50th percentile Spring Reading RIT

for 7th grade is 218. The 50th percentile Spring Reading RIT for 8th grade is 220. The 50th to 79th percentile Spring Reading RIT for 7th grade is 219-230. The 50th to 79th percentile Spring Reading RIT for 8th grade is 220-233. The 80th percentile Spring Reading RIT for 7th grade is 231 and the 80th percentile Spring Reading RIT for 8th grade is 233.

Table 1

*8 Year Trend Average RIT Score Data*

| | NWEA-MAP Spring Average RIT Reading Score | |
|---|---|---|
| Year | 7th Grade | 8th Grade |
| 2009-2010 | 209.4 | 214.8 |
| 2010-2011 | 211.5 | 211.3 |
| 2011-2012 | 214.1 | 216.9 |
| 2012-2013 | 210.1 | 212.4 |
| 2013-2014 | 209.6 | 215.9 |
| 2014-2015 | 214.8 | 217.4 |
| 2015-2016 | 214.0 | 218.7 |
| 2016-2017 | 210.8 | 217.0 |

**What is Pirate Time?**

*SuccessMaker Reading* is a web-based system that supplements regular reading instruction with targeted instruction, practice and assessment. Focus is placed on the essential reading skills based on state standards. SuccessMaker Reading is a product of Pearson guided by agreements and conclusions supported by well-respected names in the

field of reading (Pearson Education Inc., 2017). The instructional software aims to improve skills in the areas of phonological awareness, phonics, fluency, vocabulary, comprehension, grammar, spelling, and concepts of print. Instruction adapts as students work through lessons and matches student skill level and progress.

To assist in improving reading growth and reading proficiency of the at-risk population of reading students, the reading intervention class "Pirate Time" was created by the principal during the spring of 2017 to help students performing at or below the 50$^{th}$ percentile on the NWEA-MAP spring reading assessment. The purpose of the additional reading intervention class was to improve deficient reading skills and help students reach their NWEA-MAP goal.

Pirate Time is a 25-minute, daily, additional class period built into student schedules. The class is in addition to the 90-minute block of reading instruction provided to all students. Pirate Time is a semester or yearlong course taught by a certified teacher and is held the period before the student's lunch period. Students utilize SuccessMaker Reading for 20 minutes during Pirate Time.

Pirate Time is held in a regular classroom setting equipped with a set of 28 Chromebooks. There are 18 eighth grade intervention classes and 13 seventh grade intervention classes. Each class is taught by a certified teacher and includes no more than seventeen students. Students receive a pass/fail grade every five weeks of each quarter. Grades in Pirate Time are based on the weekly cumulative performance of time spent, percentage correct, exercises attempted and gains.

Teachers received six hours of training over a two-day period in August on how to deliver and progress monitor the intervention. Teachers run the end of session report daily to monitor student completion and to target students who need additional support. Intervention teachers meet regularly with the students' Language Arts teachers and the reading intervention specialist to discuss student progress and skill deficits. Together, teachers plan how to best meet the needs of students based on current relevant data. Additional training was provided in November due to a lack of growth in at-risks students based on cumulative performance.

Teachers progress monitor students weekly during the intervention period and report every five weeks on each student's progress. When necessary, students are regrouped after the fifth-week mark to allow for more individualized instruction for students with similar needs.

Pirate Time allows for movement of students to provide more strategic instruction of students with similar needs. To exit Pirate Time, students must score above the 50$^{th}$ percentile on NWEA-MAP taken in January. Students are placed into Pirate Time during the school year if they meet one of the following criteria: (1) failing Language Arts grade, (2) NWEA-MAP score at or below the 50$^{th}$ percentile in either Winter or Spring, or (3) the Problem Solving Team (PST) recommends placement. Any change to the student's schedule is made in conjunction with the student, parent, student services and administrative team.

The What Works Clearinghouse (WWC) identified SuccessMaker Reading as "a set of computer-based courses designed to supplement regular K-8 reading instruction"

(U.S. Department of Education, 2015). The program aims to improve skills in areas such as phonological awareness, phonics, fluency, vocabulary, comprehension, concepts of print, grammar, and spelling. Foundations courses contain basic skill building exercises, while Explore-ware courses focus on reading and writing activities aimed at building higher-level analytical skills. SuccessMaker Reading analyzes a student's progress and assigns specific segments of the lesson, introducing new skills as they become appropriate. As the student progresses, an algorithm calculates the probability of the student answering the next exercise correctly, which determines the next step of the lesson (U.S. Department of Education, 2015).

When students begin SuccessMaker Reading, a pre-assessment is administered and students are placed at their instructional reading level with 75% accuracy based on the student's Lexile Reader score. The Lexile Reader score represents a person's reading ability. Two types of activities in the pre-assessment include a short section of text (250-500 words) followed by five questions or a series of five short passage slices (125-175 words) with one question each. The problems are presented in the form of literal, interpretive and applied. Decisions on student performance are made after every five questions (Pearson, 2017d). The assessment takes between 15-60 minutes depending on the student's reading rate and consists of 30-50 questions (Pearson, 2017d).

Once the pre-assessment is completed students are given their present level of ability and yields an Initial Placement score. SuccessMaker Reading's Adaptive Motion Learning Model designs a path for the student based on the Initial Placement score. Students work independently on skill areas that are unique to the student. Movement

through SuccessMaker Reading is based on a student' mastery of skills and learning objectives. Students revisit mastered objectives to maintain mastery of the objective. Student reading performance is measured by not mastered, at risk, or mastered.

The assessment of student progress is reviewed weekly to determine progress or the need for additional remediation. At the end of the semester the cumulative report is reviewed to determine student overall incremental growth.

## Problem Statement

ACT Corporation (2008) found that fewer than two in ten 8th graders were on target to be ready for college level work by the time they graduate from high school. In 2015, the Illinois School report card indicated that 38% of reading students met or exceeded the reading goal for the Partnership for Assessment of Readiness for College and Careers (PARCC) exam. In 2016, only 36% of reading students met or exceeded this standard (Illinois School Report Card, 2017). Students failing to achieve basic levels of proficiency in the major subjects are considered at-risk (Kaufman, Bradbury, & Owings, 1992, p. 2). The Georgetown University Center on Education project found that by 2018, 62% of U.S. jobs will require education beyond high school (Carnevale, Smith, & Strohl, 2011).

Since 1975, despite gains in literacy the percentage of students scoring at or above proficiency in reading continues to vary by racial category (U.S. Department of Education, 2013). In 2013, 21% of Latino and 16% of Blacks reached the NAEP cut point for reading proficiency (Cullen, 2014). At this Midwestern suburban middle school 70% of students fell below the $60^{th}$ percentile on the NWEA-MAP reading assessment

during the winter of the 2016-2017 school year. NWEA-MAP states that students are likely to be college ready if the perform between the 59th to 69th percentile on the reading assessment (Meng Thum, & Matta, 2015). In addition, White students outperform Black and Latino students on average by double to triple RIT points (Northwest Evaluation Association, 2017).

The problem of this study was to determine the effectiveness of the intervention SuccessMaker Reading during Pirate Time for at-risk seventh and eighth-grade students while also enrolled in a Language Arts course which is aligned to CCSS. There is a significant need to identify the effectiveness of the reading intervention and its effect on student RIT growth on the NWEA-MAP reading assessment, to determine if students are college and or career ready, and to close the achievement gap between minority and non-minority students.

This study examined the implementation and effectiveness of SuccessMaker Reading during Pirate Time as a separate class intervention for at-risk reading students. This study will help to determine if a reading intervention can help close the achievement gap, improve RIT scores on the NWEA-MAP reading assessment for seventh and eighth grade at-risk reading students, and determine if the scores of White, Black and Latino students are affected differently. The results of this study will assist educators expand the strategies within the instructional toolbox to address reading difficulties for 7th and 8th grade students failing to meet basic levels of proficiency.

## Purpose of the Study

No scholarly studies were available using SuccessMaker Reading as an intervention or a supplemental learning tool for a reading class. SuccessMaker Reading has the potential to assist low performing students and effectively monitor student progress. No previous research studies have investigated the use of SuccessMaker Reading along with the NWEA-MAP reading assessment or measured student growth and success with regards to reading scores, course grades, and MyPerspectives assessments.

The purpose of this quasi-experimental study was to measure the effectiveness of SuccessMaker Reading during Pirate Time when used in addition with a Language Arts course. This study analyzed if SuccessMaker Reading as a separate class had an effect on RIT growth from the NWEA-MAP reading assessment, a student's Language Arts course grade, and MyPerspectives assessments compared to students in a Language Arts course who did not use SuccessMaker Reading.

## Significance of the Study

This study has significant implications for schools tasked with finding ways to meet the needs of diverse student populations. Given the challenges facing educators of at-risk reading students with a vast range of abilities, interventions are needed to address skill deficiencies among readers. The findings of this research will inform educators about how a web-based reading intervention can assist at-risk reading students. Students using SuccessMaker Reading during Pirate Time will provide educators with information

about progress monitoring and assessment data that will help determine if the intervention benefits students when provided as a separate class.

Using NWEA-MAP RIT reading scores from the reading assessment provides educators with a tool to measure growth over the course of one semester and determine the effectiveness of the intervention. Educators will have a method to measure the effectiveness of the intervention with at-risk student growth data. This information will provide a better understanding of the specific needs of at-risk students and offer insight on how to implement this intervention to ensure student success.

## Overview of the Methodology

This quasi-experimental study is relevant to educators concerned with ensuring that all students can read at grade level and have the necessary skills to be college and career ready. Since 2003, public and private universities have seen an increase in remedial courses taken by first-year students (Parsad & Lewis, 2003). Students are leaving elementary and high school unprepared for college (Kirst & Venezia, 2006). This study answers questions about the effectiveness of the intervention SuccessMaker Reading to improve student growth on the NWEA-MAP reading assessment.

Campbell and Stanley (1963) noted that a quasi-experimental study is an imperfect experiment where full experimental control is lacking, the researcher is aware of the imperfections in the design of the study, and the researcher is aware of competing interpretations of the data. This quasi-experimental study used a quantitative approach which allows the researcher to determine the relationship between the reading

intervention (independent variable) and student growth (dependent variable) of seventh and eighth-grade at-risk middle school students in a Midwestern suburban middle school.

The quantitative data collected during the study includes Spring 2017 and Winter 2018 NWEA-MAP reading RIT scores from the NWEA-MAP reading assessment of all students at or below the 50$^{th}$ percentile to measure student growth. Additional comparisons will evaluate the differences in scores between White, Black, and Latino students. In addition, Language Arts course grades and MyPerspectives pre and post assessments are collected to determine if the intervention has an effect on a student's overall progress in reading.

The sample for this quantitative, quasi-experimental study consists of one Midwestern suburban middle school of seventh and eighth-grade students, with 89%. Of students coming from low-income families. There are approximately 548 students attending the school. There are 304 eighth graders and 244 seventh graders.

Certified teachers lead the reading intervention during Pirate Time. Teachers received six hours of training from Pearson intervention specialists on how to implement the intervention. An intervention specialist provides support to teachers throughout the school year. The intervention specialist is available and in the building daily to assist teachers. Intervention teachers, the students' reading teacher and the intervention specialist meet formally once each week to discuss student progress and instructional needs.

Data collected during the study include: Language Arts course grades, progress monitoring data, MyPerspectives assessment data, and NWEA-MAP winter and spring

reading RIT scores. Data sources used are SuccessMaker reading, weekly progress monitoring reports, semester course grades, MyPerspectives classroom evaluation reports, and spring and winter NWEA-MAP reading growth reports. A quantitative framework was used to analyze all data and report findings.

## Conceptual Framework

It is critical for educators to confront difficult social topics within schools in order to transform educational practices. Fullan (2010) states that schools need moral purpose and high expectations for improvement. Those who lead schools and those who teach students should hold the belief that all students regardless of social, cultural or economic status deserve equity in educational outcomes. Academic performance, retention rates, standardized testing scores, college attrition, graduation rates, and most significantly, economic disparities, are widely thought to be the key significant factors in educational inequity (Orfield & Lee, 2005). These categories reveal that inequities remain and implementing solutions with urgency are required if the goal is a society based on social justice.

The conceptual framework for this study is social justice. According to Marshall and Oliva (2010) social justice has five characteristics:

1. A consciousness of the broader social, cultural, and political contexts of schools.
2. The critique of the marginalizing behaviors and predispositions of schools and their leadership.

3. A commitment to the more genuine enactment of democratic principles in schools.
4. A moral obligation to articulate a counter-hegemonic vision or narrative of hope regarding education.
5. A determination to move from rhetoric to civil rights activism.

By acknowledging and addressing inequities, schools have the ability to transform instruction, curriculum and learning environments. This practice has implications on larger structures in society beyond the school environment and legislative community. Social justice has grown in popularity and has created both a sense of celebration and anger given the disconnection between policy and practice.

Despite more than 20 years of school reform efforts policymakers and educators have yet to fulfill the promise of all means all. By utilizing social justice as the conceptual framework for this study the researcher is providing a moral basis for accountability and student learning. Educating every child for success must be the priority. Social justice is a driving force for improving conditions in communities that are underserved (Marshall & Oliva, 2010).

## Research Questions

This study will address the following research questions:

1. Do Language Arts students who use SuccessMaker Reading during Pirate Time demonstrate improvement as measured by student reading growth on NWEA-MAP reading assessment and how do these results compare to non-SuccessMaker Reading students?

2. Is performance by Language Arts students who use SuccessMaker Reading during Pirate Time consistent irrespective of the grade, gender, and race?
3. Are Language Arts students who use SuccessMaker Reading during Pirate Time able to improve performance relative to non-SuccessMaker Reading students as measured by pre-defined gap statistic and if so, to what degree?
4. Do Language Arts students who use SuccessMaker Reading during Pirate Time demonstrate growth on Language Arts pre and post assessments, quarter and semester grades and how do these results compare to non-SuccessMaker Reading students?
5. Is there a statistically significant association between NWEA-MAP reading growth and time spent on SuccessMaker Reading by students during Pirate Time?
6. Is there a statistically significant relationship between NWEA-MAP reading growth and incremental growth by students who use SuccessMaker Reading during Pirate Time?

## Key Terms

*Assessment.* The evaluation or estimation of the nature, quality, or ability of someone or something (Merriam-Webster, 2017).

*At-risk students.* Students who are likely to leave school before receiving a high school diploma (Kagan, 1990).

*Course grade.* A particular level of rank, quality, proficiency, intensity or value (Merriam-Webster, 2017).

*Growth.* A stage or condition in increasing, developing or maturing (Merriam-Webster, 2017).

*Intervention.* Integrated, strategic, meaningful, and if necessary, intensive curriculum and instruction to powerfully enrich and expand adolescents' reading lives (Greenleaf & Roller, 2002, p. 495).

*Northwest Evaluation Association-Measures of Academic Progress (NWEA-MAP).* A computerized adaptive assessment to measure growth in student achievement (Olson, 2007).

*Partnership for Assessment of Readiness for College and Career (PARCC).* A group of states working together to develop a set of assessments that measure whether students are on track to be successful in college and career (PARCC, 2017).

*Response to Intervention (RtI).* A tiered, integrated system of assessment and instruction, with efforts primarily targeted at improving student achievement in the area of reading (Jones, Yssel & Grant, 2012).

*SuccessMaker Reading.* A set of computer-based courses designed to supplement regular K-8 reading instruction (U.S. Department of Education, 2015).

## Summary

Research of reading interventions and SuccessMaker Reading will help to identify successes in improving at-risk students' reading skills on the NWEA-MAP reading assessments. Currently there are no research studies on Language Arts students using SuccessMaker Reading and measuring RIT growth on the NWEA-MAP reading assessments. Any measured differences between students who use SuccessMaker

Reading during Pirate Time or students who do not use SuccessMaker Reading will help to support the use of this reading intervention.

The review of literature in Chapter II will review related literature which provides historical information on RtI, closing the achievement gap, improving literacy skills, and reading interventions. The review will also investigate research studies on *SuccessMaker Reading* and multiple computer-based reading interventions.

Chapter III will present a review of the research questions, sample populations, the study's design, data, and assumptions and limitations and delimitations. Chapter IV presents the data analysis and results of the findings of the study. Chapter V discusses conclusions and implications for further research based on findings from the study. Appendices and References will conclude the study.

# CHAPTER II

# REVIEW OF THE LITERATURE

## Introduction

Moral dilemmas arise daily within schools from teacher evaluations, student discipline, management of school funds, or negotiations of community controversies (Shapiro & Stefkovich, 2011). Closing the achievement gap remains a priority and moral dilemma facing schools today. A large number of studies spanning the past three decades link high-quality leadership with positive school outcomes, including student achievement (Hallinger & Heck, 1998). Students who face significant challenges with reading in middle school do so because they have struggled with literacy in early grades. Reading interventions can help at-risk students deficient in literacy skills close the achievement gap. Educators have a moral obligation to have high expectations of all students and to implement practices which ensure that all students have equity of opportunity for success in schools regardless of race, ethnicity, or socioeconomic status.

## Body of the Literature Review

Success in middle school is dependent on a student's ability not only to read, but to read and comprehend a variety of text well. Educators are ethically and morally obligated to teach skills and strategies so that students comprehend the words they read.

The analysis of this literature review consists of five fundamental areas of focus; how educators close the achievement gap between White, Black and Latino students, how

educators improve learner literacy skills, the outcomes of Tier 2 interventions in a separate class setting, how successful Integrated Learning Systems have been in improving reading achievement, and programs that appear to yield student growth.

**Closing the Achievement Gap**

In the last half of the 20th Century, the promise was access to education to larger segments of the population. Brown V. Topeka declared that separate was unequal (Pearson Education, 2005), Lyndon B. Johnson's Elementary and Secondary Education Act promised equal educational opportunity for children in low-income communities (U.S. Department of Education, 2010). Title IX sought to ensure equal access by gender (U.S. Department of Labor, 2003), Lau V. Nichols required schools to address the needs of language minority students (Summary of Lau v. Nichols, n.d.). Public Law 94-142 ensured a Free and Appropriate Public Education for children with disabilities (Public Law 94-142, n.d.). Nevertheless, achievement gaps persisted (Uline & Johnson, 2017).

Today, more than two-thirds of all eighth graders read at less than a proficient level, and half of those students are so far behind that they are scoring below what the United States Department of Education considers as its basic level of reading performance (Heller & Greenleaf, 2007). There are a variety of factors contributing to why the achievement gap exists. These include the situation to which children are exposed before schooling begins, demographics, social dynamics of schools and the gap attributable to school policies and practices (Robinson, 2004).

The National Assessment of Educational Progress reports almost half of all Black and Latino eighth graders read below basic level (NAEP, 2003). Since 1975, despite

gains in literacy the percentage of students scoring at or above proficiency in reading continues to vary by racial category (U.S. Department of Education, 2013). In 2013, 21% of Latino and 16% of Blacks reached the NAEP cut point for reading proficiency (Cullen, 2014). Only 13% are reading at or above proficient level compared to 41% of White eighth graders.

The best way to close the gap is through effective instruction (Chall, 2000). Effective instruction takes time, and struggling students need the additional time provided during the intervention to develop missing skills (Brown-Chidsey, Bronaugh & McGraw, 2009). Researchers have discovered that intensive, early and remedial instruction is needed to help beginning and at-risk readers towards securing the skill of reading (Maiao, Darch, & Rabren, 2002).

Children enter school with varying levels of academic skills, and these differences often correspond with race/ethnicity. Current research attributes the White/Black and White/Latino test score gaps to differences in the quality of schools attended by children (Potter & Morris, 2017). By the age of 18, the average Black student is academically four years behind the average White student, and many Black students leave high school unable to read, write or do simple math (Thernstrom & Thernstrom, 2003). In this Midwestern suburban middle school students live in the same community and attend the same schools, yet the gap persists. There must be other contributing factors to explain the reasons for the achievement gap.

Children that come from lower socioeconomic status families tend to perform worse in school than children from more privileged backgrounds (Von Stuum, 2017).

This information is evident in the early stages of school and widens throughout the final years of secondary education (Von Stumm, 2016). Closing the achievement gap is crucial if we are to reduce racial inequality in educational attainment and financial earnings (Jencks & Phillips, 1998). It is the responsibility of the schools to find practical solutions to close the achievement gap and ensure that all students learn. This responsibility is a complicated task attempted by many over the past few decades.

Explanations for disparities in academic achievement of low income minority and mainstream students have a long, complex, and contested history in the United States (Banks, 2009). The United States education system has historically marginalized students with diverse backgrounds which has contributed to the achievement gap. In order to close the achievement gap, the historical educational experience of certain student groups must be understood if the goal is to understand their current performance in education. Closing the achievement gap requires raising expectations and standards in education, raising the curriculum rigor, increasing parent involvement and by requiring higher expectations of teachers.

According to Perry, Steele and Hilliard (2003), the gap should be between the current performance and levels of excellence. He continues to state "when we choose excellent performance as the goal, academically and socially, we change the teaching and learning paradigm in fundamental ways" (p. 138). By setting the required performance at excellence, we require excellent performance to be articulated. Many educators enter schools without adequately understanding the: backgrounds, religions, social classes,

histories, languages, cultures, structures, race and other characteristics of their students and families.

Teacher expectations attribute to low student achievement (Mayer, 2002). The problems of racism and mainstream White hegemony are pervasive in public education (Clark, 1984). Confronting racism head on by engaging in dialogue is required first to address the issues to assist in closing the gap. Engaging in this dialogue is uncomfortable for many because it requires deep internal reflection of biases that all people keep hidden and will not readily acknowledge to others out of fear of being judged.

**Improving Learners Literacy Skills**

To respond to the growing problem of deficiencies in adolescent readers, the United States Federal Government launched an unprecedented effort of education reform for literacy and overall academic expectations, the No Child Left Behind (NCLB) Act of 2001. Studies show that children who have not developed some basic literacy skills by the time they enter school are three to four times more likely to drop out in later years (National Adult Literacy Survey, 2003). President George W. Bush created a $100 million reading intervention program as part of NCLB in 2004 for middle and high school students to address the problem of literacy development. The President's budget included $200 million to support the striving readers' initiative to improve the reading skills of middle and high school students (White House Press Release, 2005).

Researchers noted that poor readers in elementary school often remain poor readers throughout their school years, with difficulties intensifying each year (Carlson & Francis, 2002). Deficits in early reading skills tend to remain or even increase through

elementary school, widening the gap between those who possess good literacy skills and those who do not (Stanovich, 2000). A child who completes the second grade without being able to read has only a 25% chance of reading at grade level by the end of elementary school (Snow, Burns, & Griffin, 1998).

Moje, Young, Readence, and Moore (2005) stated that current literacy development processes used in class traditionally are based on the premise that learning to read ends in elementary school, specifically the fifth grade. During the transition from elementary to middle school is when students need to shift from learning to read to reading to learn (Herber, 1978). However, if a student has not learned to read by middle school they are left to struggle and fail or even worse are pushed through by social promotion without the necessary skills for success.

Many theories are found in research to improve literacy skills. Direct, explicit instruction is the best model for improving the reading ability of adolescent struggling readers (Rosenshine, Meister & Chapman, 1996). Frequent progress monitoring provides feedback to students and teachers, which improves instruction (Lester, 2003). This feedback yields valuable information to meet the needs of students to correct issues before they worsen. By offering support in addition to the regular reading class a student is able to build skills. An extended block of time for reading is best (Hong & Hong, 2009). Coupling this support through a medium enjoyed by students encourages participation.

Adolescents enjoy computer-assisted instruction (Christmann, Badgett & Lucking, 1997). This enjoyment motivates students to practice skills. Adolescents will do

more independent reading when text is matched to ability level. Independent reading increases comprehension levels. Reading comprehension is the most important component in reading for adolescents (Franzak, 2006).

To assist struggling students during this process, educators move beyond helping students survive through trial-and-error tactics to putting in place researched based reading interventions that are explicit, intense, motivating, culturally affirming, and responsive (McCray, 2001). Goldman (2012) notes that effective readers must be able to apply different knowledge, reading, and reasoning processes to various types of content, from fiction to history, to science, to news accounts and user manuals. Readers must assess sources of information for relevance, reliability, impartiality, and completeness, and connect information across multiple sources. Successful readers must use not only general reading skills but also pay close attention to discipline-specific processes.

**MyPerspectives**

MyPerspectives is a core Language Arts curriculum designed by Pearson. MyPerspectives English Language Arts (ELA) is a grade six-12 student-centered curriculum that provides a connected approach to improving student learning and achievement. Students read a text and engage in activities that inspire thoughtful conversation, discussion, and debate (Pearson, 2017a).

According to Pearson (2017b), MyPerspectives ELA for grade seven and eight have appropriately rigorous, and rich text accompanied by cohesive writing and speaking questions with a task that build over time while providing support for students who struggle. The materials provide practice and production opportunities for students to grow

their literacy skills in multiple areas as they build knowledge as well. Students have many opportunities to learn skills by working with varied tasks and in advancing research and critical thinking abilities.

Materials are organized to support writing instruction, vocabulary development and independent reading of complex text over the course of the school year. The materials include support for educators to implement, plan and differentiate the standards-based materials, to leverage digital resources when appropriate. Text within these grade levels meets the expectation for all Gateway criteria established. According to Pearson (2017a), the Gateway Report evaluates a text/program for text quality, complexity and alignment to standard components. It looks for building knowledge with texts, vocabulary, and task. There are three possible rating categories: Does not meet expectations, Partially meets expectations, and Meets expectations. The three areas evaluated are usability, text quality, and building knowledge.

In the usability category, MyPerspectives Meets expectations. According to Pearson (2017a), the instructional materials are easy to use, and the design is simple and facilitates student learning. Planning, instruction, and assessment are well supported with quality resources (print and digital), standards-aligned assessments, support for differentiated instruction and the effective use of technology.

In the text quality category, MyPerspectives meets expectations. According to Pearson (2017a), the text students encounter is rich and varied, providing rigorous opportunities to build literacy skills over the course of the year while engaging with a balance of text genres and modes.

In the building knowledge category, MyPerspectives Meets expectations. According to Pearson (2017a), instructional materials integrate reading, writing, speaking and listening through topically organized sets framed by an Essential Question. Students engage in research supported by text-dependent questions and tasks as they build and demonstrate knowledge and skills in all areas of ELA.

**Response to Intervention (RtI)**

Response to Intervention was designed to assist children by applying solutions to learning difficulties and monitoring progress. For this study, research deals exclusively with Tier 1 and Tier 2. The tiers refer to different types of instruction used with students (Brown-Chidsey et al., 2009). The first tier consists of teaching or core curriculum and is viewed as being preventative with its methods and interventions (Berkeley, Bender, Peaster, & Saunders, 2009). Tier 1 encompasses the entire student population and the core instructional curriculum. The primary goal of Tier 1 is to provide high-quality instruction through the curriculum (Mellard et al., 2010).

The Tier 1 process includes the development of school leadership teams and grade level teams to improve the classroom environment by differentiating instruction, in-class interventions and a variety of teaching strategies (Mellard et al., 2010). Although Tier 1 practices contain a variety of methods to meet the needs of the entire student population, there are many instances where students experience difficulties learning as concepts become more rigorous.

Students who struggle with grade-level work may experience greater gaps in learning as they move through more difficult curricula (Daly et al., 2007). The ability to

read is an important skill for children's academic success and overall well-being (National Reading Panel, 2000; Snow et al., 1998). Students who struggle with reading may begin to exhibit issues in other subject areas and behaviors. When core instructional strategies are unsuccessful, it is time for a more intensive method to ensure students do not fall too far behind as reading is at the base of all learning.

Tier 2 is designed to target those students who struggled with the core curriculum and have not been successful in Tier 1. Research suggests that at least 20% of children have some difficulty in mastering the skills necessary to become proficient readers (Fletcher et al., 2007). In Tier 2 settings, students work with general education teachers or intervention specialists. Implementation of computer-based programs (Gatti Evaluation Inc., 2011; Given et al., 2009; Pearson, 2017; Scholastic, 2011; The University of Utah Reading Clinic, 2015; U.S. Department of Education, 2009), separate classes (Taylor, Frye & Maruyama, 1990; Viadero, 2008; Wren, 2002) to address their deficient skills. Identification of students occurs through a screening process that may consist of grades, assessment data or other pre-determined methods to monitor student progress (Ball & Christ, 2012).

Students in Tier 2, have learning and achievement disabilities (Mellard et al., 2010). These are students that have not been identified as special education students but struggle with the necessary skills to be proficient at grade level. Once a student shows progress during Tier 2, they are removed from RtI, if not they proceed to Tier 3. The research in this study focuses on Tier 2 to address reading deficiencies.

There are two protocols for implementing the Tiered RtI model. The Protocol design and the Problem-solving model. The Protocol design prescribes a particular intervention for the entire staff for all students who fall below established criteria (Searle, 2010). Staff is carefully trained and monitored for fidelity of implementation of the intervention (see Figure 2).

| The advantages of the protocol model | The disadvantages of the protocol model |
|---|---|
| • More efficient staff training that focuses on only one research-based intervention plan for a given problem area.<br>• A highly standardized program that allows relatively easy fidelity monitoring.<br>• A predetermined intervention that reduces team meeting time. | • The limitations of only one approach, which may not accommodate the needs of every learner.<br>• A potentially weak buy-in from staff charged with implementing a plan they have had no hand in developing or selecting.<br>• Limited staff training on a variety of research-based approaches. |

Note. This figure shows the advantages and disadvantages (Searle, 2010).

*Figure 2*. The advantages and disadvantages of the protocol model

The Problem-solving model prescribes a team of trained individuals using a systematic approach to create an action plan for the intervention (see Figure 3). The problem-solving model is considered as an extension of pre-existing child study (Child find) teams (Cameron, Parks, Schulte, & Stiefel, 2006).

| The advantages of the problem-solving model | Disadvantages of the problem-solving model |
|---|---|
| ● Customized plans that are appropriate for both learners and educators.<br>● A flexible model that can be adapted to individual students' needs.<br>● A potentially strong buy-in from those who implement the plan, resulting from their direct input. | ● The requirement that team members possess a high level of expertise in many areas.<br>● More time-consuming training and intervention design.<br>● The difficulties in monitoring such a fluid process. |

This figure shows the advantages and disadvantages (Searle, 2010).

*Figure 3*. The advantages and disadvantages of the problem-solving model

Like most methods, there are advantages and disadvantages to these protocols. However, the standard protocol has several advantages over the problem-solving method; it includes all staff and one intervention strategy, it is easier to assess accuracy, more students can participate in the intervention, and it lends itself to group analysis (Carney & Stiefel, 2008). The most efficient approach to RtI is to use a combination of the two. This research will use a combination of the two to most effectively reach students and focus on growth and proficiency.

**Integrated Learning Systems**

Research shows that the use of Integrated Learning Systems (ILS) have proven successful in improving student reading achievement. Utilizing ILS have shown to increase abilities and deficient skills. Hannafin and Foshay (2006) found students who participated in computer-based programs had significantly higher test scores than students who did not participate in computer-based programs. Hasselbring (1986)

conducted research and found that computer-based instruction had positive effects on evaluative studies.

Kulik and Kulik (1991) provided a meta-analysis of findings from 254 studies on the effect of computer-based instruction. The studies included Special Education, Elementary Education, Secondary Education and College Education. The mean effect of the sizes was an average of .42 and increased final exam scores by .30 standard deviations. Shannon, Styles, Wilkerson, and Peery (2015), discovered that when students engage in computer-assisted learning that incorporates progress monitoring, continuous feedback, and independent reading practice aligned with their interest and ability levels, their reading outcomes increase significantly. Hughes, Phillips and Reed (2013) note that self-paced computer approaches may have utility in developing reading skills at a greater rate. These impacts on reading suggest that the improvements observed with computer programs over longer periods of time can be replicated.

**READ 180**

READ 180 is a computer-assisted, research based comprehensive reading instruction program to improve the reading achievement for adolescent readers (Scholastic, 2011). It is designed for smaller classes where students rotate through a CAI format (Scholastic, 2011). The instructional content of Read 180 consist of phonemic awareness, phonics, fluency, vocabulary and comprehension. The design follows a three-part teaching plan on a daily basis: (1) whole group, (2) small group and (3) wrap up.

READ 180 provides continuous assessment and immediate feedback. It is designed specifically to be an intervention reading program for struggling students.

**SuccessMaker Reading**

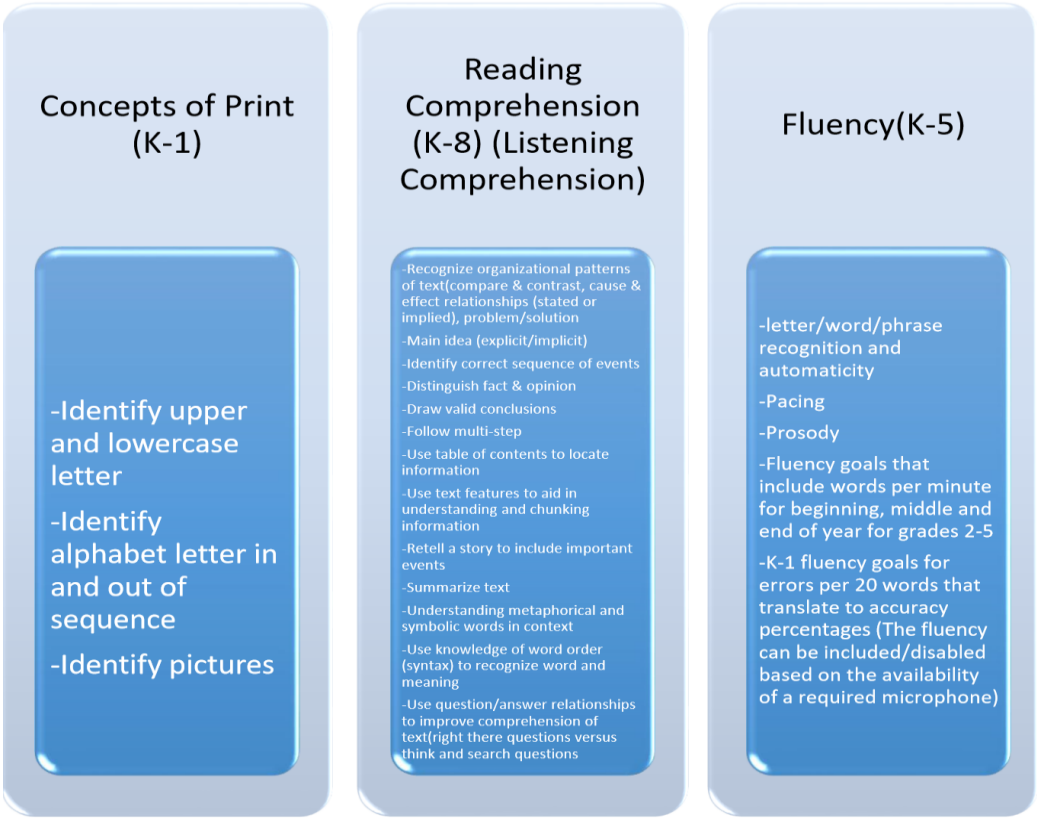
SuccessMaker Reading is an advanced form of computer-based instruction (CBI) that is comprised of both courseware and management tools. The computer-based courseware covers several grade levels and content area. The classroom management tool includes sophisticated teacher reporting features, online achievement test, and student progress reports (Brush, Armstrong, Barbrow, & McGraw, 1999).

In a “White Paper" on its website, Pearson Digital Learning provides one-page reports from several school divisions stating significant results in reading after implementation of SuccessMaker Reading (Given et al., 2009). SuccessMaker Reading is instructional software that provides elementary and middle school learners with adaptive, personalized paths for mastery of essential reading concepts and delivers outcome-based data to inform educational decision making (Pearson, 2017). With programs such as SuccessMaker Reading, schools can implement a cost-effective intervention while improving students' reading abilities.

An overview of SuccessMaker Reading was conducted by the University of Utah Reading Clinic (2015). According to this review, SuccessMaker Reading is an adaptive, interactive multimedia course that delivers supplemental reading instruction on students’ instructional level. Students are placed based on the result of the SuccessMaker Reading placement test. Lessons are adaptive as movement through the course is determined by the student’s response to and interaction with the course learning objective. The program adapts based on the student's task performance and demonstration of understanding of concepts and content.

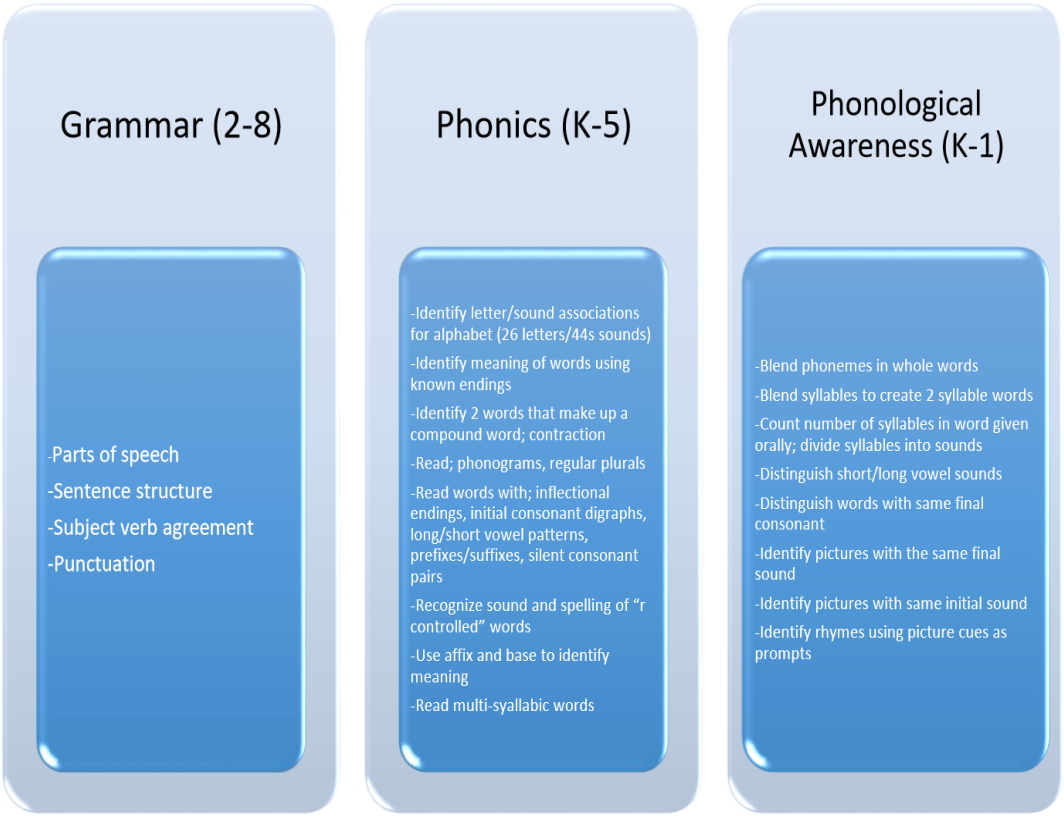
According to the University of Utah Reading Clinic (2015), the target population for SuccessMaker Reading are students in grades K-12, identified as Special and General Education, Gifted, At-risk, and ELL. SuccessMaker Reading will adapt instruction based on each student's abilities even for students in demographic grades 9-12. If student levels drop into the grades 3-5 range, the instructional videos will have an appearance that is age appropriate for secondary students. Figures 4, 5 and 6 below list the instructional strands with SuccessMaker Reading.

According to the review conducted by the University of Utah Reading Clinic (2015), the lesson format divides into five areas: Guided Practice, Remediation, Fluency assessment, Independent Practice, and Retention. Guided practice is based on the student's instructional reading level and the appropriate strand level. The Guided Practice set is comprised of four lessons with some readers at higher level Lexile scores to ensure students are exposed to a wider range of vocabulary and build listening comprehension. When a student assessment is less than 65% accuracy in response to phonics, comprehension, or vocabulary items, remediation follows each guided practice lesson. The system reintroduces activities considered unsuccessful in Delayed Presentation.



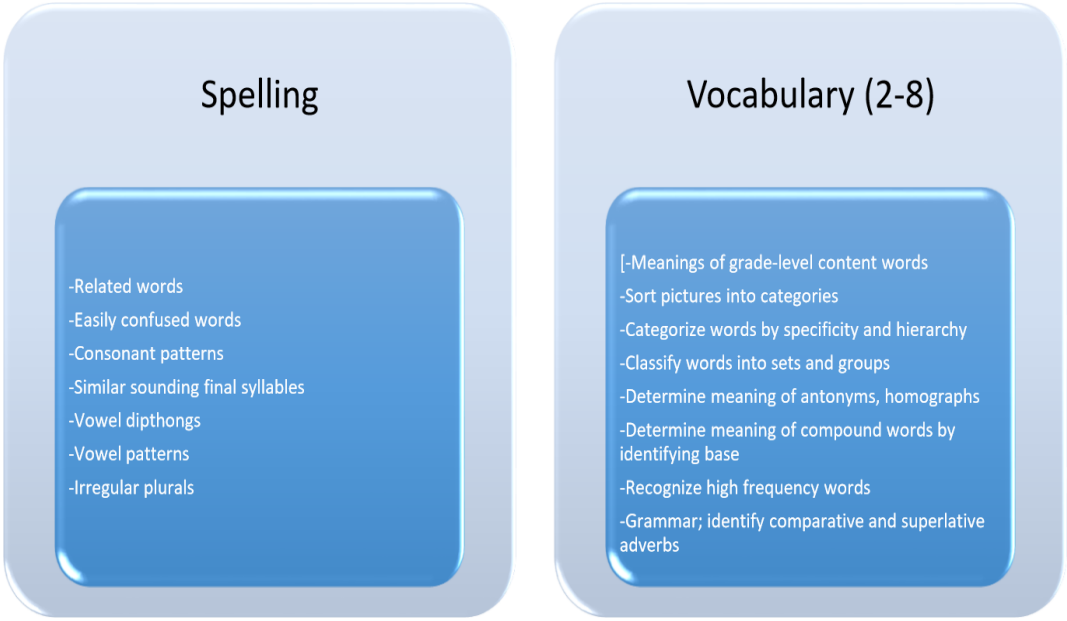

*Note.* These are three of the instructional strands from SuccessMaker Reading. A student would use this intervention in Pirate Time. Adapted from Overview of HB513 USOE Software Programs (SuccessMaker) by University of Utah Reading Clinic, 2015.

*Figure 4.* SuccessMaker Reading Instructional Strands




Note. These are three of the instructional strands from SuccessMaker Reading. A student would use this intervention in Pirate Time. Adapted from Overview of HB513 USOE Software Programs (SuccessMaker) by University of Utah Reading Clinic, 2015.

*Figure 5.* SuccessMaker Reading Instructional Strands




*Note*. These are two of the instructional strands from SuccessMaker Reading. A student would use this intervention in Pirate Time. Adapted from Overview of HB513 USOE Software Programs (SuccessMaker) by University of Utah Reading Clinic, 2015.

*Figure 6.* SuccessMaker Reading Instructional Strands

Fluency Assessment allows students to practice skills and fluency by recording and assessing their performance. Students can practice reading text, phrases, words, and letters. Recorded fluency files are stored for teachers to access and use as needed. Both word fluency, the ability to read a word correctly on sight and fluency, reading a passage with accuracy, speed, and inflection fall under the category of Fluency.

Independent practice lessons provide a passage that the student reads and then answers questions. The passage is either at a lower Lexile, the student's independent reading level or the level determined by the program that the student can comprehend with 90% accuracy. Audio support is inactive in independent practice. The last area is

Retention, where a mixed presentation of items that the student has passed before moving them to the next lesson set.

The University of Utah Reading Clinic (2015) reports that the suggested usage of SuccessMaker Reading is 15 minutes per day or one hour per week. For this research students received 25 minutes, five days each week. The average student is expected to complete a full lesson in 15 minutes. A unit, which is composed of three to six lessons, is approximately 120 minutes in length. Student progress reports outline areas of difficulty, cumulative performance, last session, prescriptive scheduling, student performance and system enrollment and usage.

According to the U.S. Department of Education (2009), three studies of SuccessMaker Reading met WWC evidence standards with reservations. These three studies included 450 students ages 9-16 years in grades 4-10. Based on the three studies, the WWC considers the extent of the evidence for SuccessMaker Reading to be small for alphabetic, reading fluency and general literacy achievement, but medium to large for reading comprehension and reading achievement. According to Gatti Evaluation Inc. (2011), students who clocked 16 hours or more of program use on SuccessMaker Reading for a year significantly outperformed the comparison group.

## Competing Perspectives

Dietrichson, Bøg, Filges, and Klint Jørgesen (2017) examined interventions that aim to improve the educational achievement of low socio economic status (SES) students in elementary and middle school. Standardized assessments in reading measure outcomes and the analysis showed that there are interventions that improve the educational

achievement of low SES students. The interventions examined revealed that tutoring, feedback and progress monitoring, and cooperative learning have comparatively vast and robust average effect sizes. Dietrichson et al. (2017) discuss that although the magnitudes of the mean effect sizes for tutoring (0.36), feedback and progress monitoring (0.32), and cooperative learning are not broad enough to close the gap between high and low SES students, they represent a substantial reduction of that gap if targeted towards low SES students.

## Conceptual Framework

According to Fullan (2010), moral purpose focuses on raising the bar and closing the gap for all children and youth in society relative to those dispositions and skills essential for surviving and thriving in a complex, interdependent global society. Fullan believes that people with this sense of moral purpose believe that every child can learn given the right approach and amount of time. When people see this confirmed daily in the most difficult circumstances, they feel it even more deeply.

Marshall and Oliva (2010) state that leadership for social justice investigate and pose solutions for issues that generate and reproduce societal inequities. They continue that advocates for social justice continually strive for a more equitable and socially just society by moving from passive discourse and involvement to conscious, deliberate, and proactive practice that will produce socially just outcomes for all children.

Marshall and Oliva (2010) conclude by noting that leaders for social justice take the moral position to critically deconstruct as well as reconstruct schools in a fashion that demands that schools are sites for the equitable treatment of all students. Leaders must

also work to create schools where quality educational practices in a democratic, socially just environment take place.

According to Sergiovanni (1992), the principle of justice expressed as equal treatment of and respect for the integrity of individuals. Accepting this principle means that every parent, teacher, student, administrator, and other members of the school community have the same equality, dignity, and fair play.

Sergiovanni (1992) further explains that the principle of beneficence is expressed as concern for the welfare of the school as a community and accepting this policy means that every parent, teacher, student, and the administrator is an interdependent member responsible for the welfare of the community. The conceptual framework for this research is social justice. By utilizing social justice as the conceptual framework for this study the researcher is providing a moral basis for accountability and student learning.

## Theoretical Framework

The utilization of active interventions that are reflective of social justice encompasses Critical Theory. One factor that is important to note is that social justice was born from Critical Theory (Gutek, 2009). Viewing this research through this lens, and Critical Theory is the frame from which this researcher operates. Gutek (2009) defines Critical Theory as "assumptions about society, education, and schooling that analyzes aims, institutions, organizations, curriculum, and instruction regarding power relationships" (p. 393).

In Pedagogy of the Oppressed (1970), Paulo Freire also discusses power relationships in society and portrays critical theory in ways clearly identifiable. Freire

(1970) divides this power relationship into the oppressed and the oppressors and elaborates on four techniques used to control people which include conquest, division, manipulation and cultural invasion. He also discusses the four techniques in opposition to these which are cooperation, unity, organization and cultural synthesis. The theme throughout the writing is the state of oppression that causes a class of people to remain entrenched in poverty while the higher class benefits from the work of the lower. From this point of view, it is evident why the achievement gap persists.

Henry A. Giroux (1983), a notable critical theorist, identifies self-conscious critique as a central concept of Critical Theory. Giroux (1983) argues for a dialectical way of thinking that links history, culture, and psychology to understand and critically question current social structures to lead and inform change. In his view critical theory involves ongoing self-conscious critique with discourse and action in regards to social transformation.

According to Duffy and Scott (1998), Jurgen Habermas developed a Critical Theory as the self-emancipation of people from domination. Coupled with self-emancipation reflection is an element of Critical Theory (Hendricks-Thomas & Patterson, 1995). Emancipatory reflection enables individuals and groups to examine rules, habits, and traditions that are accepted unquestionably (Duffy & Scott, 1998).

Praxis is central to this idea (Willis, 1993). Willis (1993) defines Praxis as “the pure rational act of self-reflection coupled with action” (p. 137). Communication is another component to Critical Theory in which identifying obstacles to maintaining clear communication (Sokoly & Dokecki, 1992).

The Framework of Critical Theory was chosen for this research because it identifies nuances of at-risk students and belief systems of those that perpetuate the persistence of the gap in achievement among white and minority students. It is unacceptable and society should be outraged that only 36% of reading students are meeting or exceeding standards (Illinois School Report Card, 2017). It is urgent that society acknowledge this injustice and work to find solutions to this problem facing the youth today. Closely aligned are the beliefs of the researcher that all students can learn and are entitled to equity in opportunity for success along with Critical Theory.

## Synthesis of the Research

Solutions on how to support struggling readers have eluded those in the field of education for decades. Despite federal legislation, results of improved literacy methodology or pedagogy are minimal (O'Brien, Stewart & Moje, 1995). Research-based reading interventions must be implemented to support struggling readers (McCray, 2001). A combination of the protocol and problem-solving RtI methods have been most successful in improving student achievement (Cameron et al., 2006).

Integrated Learning Systems have proven successful in improving reading achievement (Brush et al., 1999). SuccessMaker Reading is an online program that has shown to deliver significant results in reading for middle school students (University of Utah Reading Clinic, 2015). This research analyzed the implementation and effectiveness of SuccessMaker Reading coupled with a proven strong core curriculum such as *MyPerspectives* to determine if at-risk students will benefit and close the achievement gap.

## Critical Analysis

This chapter reviewed the literature which analyzed effective, computer-based reading interventions for middle school students to close the achievement gap. There is limited information on this particular topic. However, the literature reviewed is promising. Based on the research there is a critical need for solutions to the problem of struggling readers. SuccessMaker Reading is a potential intervention which helps to develop students into better readers and close the achievement gap.

## Conclusion of the Literature

The literature reviewed has implications for educators in all school settings. Teachers must realize that interventions that are designed to target the specific skill deficiencies of students do exist. It is crucial to implement these interventions, progress monitor and use data to drive instructional practices.

This study will contribute to the literature by providing data specific to a Midwestern, suburban, middle school with at-risk reading students utilizing an extra-class intervention via a computer-based program.

We as educators have a moral obligation to find solutions to close the achievement gap. Deficiencies in literacy skills have the potential to diminish a student's opportunities not only in school but also in career choices. Response to Intervention methods are designed to address skills students are lacking and potentially hold the solution to providing equity of opportunity. Combining RtI with integrated learning systems, specifically SuccessMaker Reading, we are incorporating adaptive, personalized pathways which may assist in closing the achievement gap.

If coupled with the universal assumption that all children can learn regardless of race, socio-economic status or gender, then society will move closer to closing the achievement gap.

# CHAPTER III

# METHODOLOGY

## Introduction

The purpose of this study was to determine if SuccessMaker Reading has an effect on at-risk students when used with a seventh or eighth grade Language Arts course. In particular, this study analyzed if SuccessMaker Reading had an effect on growth from the NWEA-MAP reading assessment, the MyPerspectives pre and post assessments, and Language Arts quarter and semester course grades compared to students in a Language Arts course who did not use SuccessMaker Reading. This chapter will present the research design, research questions, population, procedure, setting and instrumentation utilized in the collection of data. This section also addresses the methods of data analysis, assumptions, and limitations.

This is a quantitative, quasi-experimental study using a pretest-posttest design. Investigational and comparison groups were defined based on participation in SuccessMaker Reading with formal statistical analysis occurring within both the investigational and comparison groups. Students enrolled in the intervention SuccessMaker Reading during Pirate Time were at or below the 50$^{th}$ percentile.

This study addressed the following research questions.

1. Do Language Arts students who use SuccessMaker Reading during Pirate Time demonstrate improvement as measured by student reading growth on

NWEA-MAP reading assessment and how do these results compare to non-SuccessMaker Reading students?

2. Is performance by Language Arts students who use SuccessMaker Reading during Pirate Time consistent irrespective of the grade, gender, and race?
3. Are Language Arts students who use SuccessMaker Reading during Pirate Time able to improve performance relative to non-SuccessMaker Reading students as measured by pre-defined gap statistic and if so, to what degree?
4. Do Language Arts students who use SuccessMaker Reading during Pirate Time demonstrate growth on Language Arts pre and post assessments, quarter and semester grades and how do these results compare to non-SuccessMaker Reading students?
5. Is there a statistically significant association between NWEA-MAP reading growth and time spent on SuccessMaker Reading by students during Pirate Time?
6. Is there a statistically significant relationship between NWEA-MAP reading growth and incremental growth by students who use SuccessMaker Reading during Pirate Time?

## Population

This study involved students from a Midwestern suburban middle school which serves grades seven and eight. Enrollment is approximately 548 students. In 2015, the Illinois School report card reported that 38% of reading students met or exceeded the goal for the Partnership for Assessment of Readiness for College and Careers (PARCC) exam.

In 2016, only 36% of reading students meet or exceeded this standard. At this Midwestern suburban middle school in 2017, 70% of students fell below the 60th percentile in reading on the NWEA-MAP reading assessment during the winter of the 2016-2017 school year.

This Midwestern suburban middle school has a diverse population. According to the Illinois School Report Card (2017), 6.3% of the students are White, 38.9% are Black, and 47.5% are Latino. The percentage of low-income students is 83.6%, 11.5% of students are labeled as having a disability, and 7.4% are labeled as ELL.

## Sample

Table 2

*Frequency Distribution of Study Subjects by Grade*

| | Investigational group | | Comparison group | |
|---|---|---|---|---|
| Grade | | | | |
| | N | % | N | % |
| 7 | 171 | 47.6 | 73 | 38.6 |
| 8 | 188 | 52.4 | 116 | 61.4 |
| Total | 359 | 100.0 | 189 | 100.0 |

Data was collected from the seventh grade class of 2019 and eighth grade class of 2018. The sample consisted of 548 total students from both grades. Each grade consisted of two groups. The students in the investigational group were enrolled in a Language Arts course and SuccessMaker Reading during Pirate Time. The students in the comparison

group were enrolled in a stand-alone Language Arts course. The investigational group will hereafter be referred to as SuccessMaker users and the comparison group will hereafter be referred to as non-SuccessMaker users.

Data was collected over the course of five months to measure growth from the NWEA-MAP spring and winter reading assessments, a student's Language Arts course quarter and semester grades, MyPerspectives pre and post assessments, and student characteristics.

## Instrumentation

This quasi-experimental, quantitative study examined performance of SuccessMaker users using data from the NWEA-MAP reading assessment results, MyPerspectives pre and post assessments, and Language Arts quarter and semester course grades. Additional informal comparisons to the non-SuccessMaker users will also be performed.

### NWEA-MAP

The NWEA-MAP assessment is a computerized, untimed, normed-referenced, multiple choice, adaptive test that measures student achievement and growth (NWEA.org, 2017). Students take the mathematics, reading, and science assessments in kindergarten through eighth grade. The NWEA-MAP reading assessment is aligned to the Common Core State Standards and is taken three times a year, the beginning of the year (BOY), middle of the year (MOY) and, end of the year (EOY). Each test is administered in the fall, winter, and spring. According to NWEA.org, results of the assessment point to where a student needs extra help and what kind of aid is needed to produce growth.

During the NWEA-MAP reading assessment, the computer selects questions from a large test bank based on how well the student answers the previous question. The assessment is broken into five goal areas: Literary Text: Key Ideas and Details, Literary Text: Language, Craft, and Structure, Informational Text: Key Ideas and Details, Informational Test: Language, Craft, Structure, and Vocabulary: Acquisition and Use.

The assessment is scored using the Rasch Unit (RIT). The RIT score is a stable equal interval score which can be compared to the score from the previous test taken by a student to calculate growth (NWEA.org, 2017). The student score range is one to 265. Students are also presented with their Lexile score. Scores from the NWEA-MAP reading assessment can be seen immediately at the conclusion of the assessment.

**MyPerspectives Assessments**

MyPerspectives pre and post assessments were administered to students at the beginning and end of the first semester. The pre and post assessments include multi-part questions, selected response, and constructed response writing prompts and include remediation assigned automatically. Students were administered the beginning of the year and middle of the year assessments. The scoring range for the MyPerspectives pre and post assessments is zero to 100.

**Composite reading growth.** The average calculation is used from all five sub-area scores from the NWEA-MAP spring reading and NWEA-MAP winter reading assessment. A composite reading score is a combination of all three sub-areas and used to determine growth. The three sub-areas include literature, informational text, and vocabulary acquisition and use. Composite reading growth is calculated by the NWEA-

MAP winter composite reading score minus the NWEA-MAP spring composite reading score.

For example, consider two hypothetical students, Joshua and Taylor. Joshua took the NWEA-MAP spring and NWEA-MAP winter reading assessments and received composite scores of 200 and 205, respectively, while Taylor took both assessments and received composite scores of 220 and 222, respectively. Looking at both hypothetical students, Joshua had a composite reading growth of five points and Taylor had a composite reading growth of two points. Joshua's composite reading growth was better than Taylor's.

**Gap statistic.** In order to more fully contextualize reading growth by SuccessMaker users, a "gap statistic" will be defined to allow comparison between SuccessMaker and non-SuccessMaker users. The gap statistic was defined as 1 - [(mean non-SuccessMaker users' NWEA-MAP winter composite reading score - mean SuccessMaker users' NWEA-MAP winter composite reading score)] / [(mean non-SuccessMaker user's' NWEA-MAP spring composite reading score - mean SuccessMaker user's' NWEA-MAP spring composite reading score)].

**Percent reading growth.** The percent reading growth is calculated using the NWEA-MAP spring and winter composite reading scores. The formula for percent reading growth is (the NWEA-MAP winter reading score minus the NWEA-MAP spring reading score) / the NWEA-MAP winter reading score, multiplied by 100.

Using the previous example for composite growth, Joshua took the NWEA-MAP spring and NWEA-MAP winter reading assessments and received composite scores of

200 and 205, respectively, while Taylor took both assessments and received composite scores of 220 and 222, respectively. Joshua's percent reading growth is 2.5% and Taylor's is 0.9%.

**Language arts quarter and semester course grade.** A student's Language Arts quarter and semester course grade are weighted 100% for coursework and assessments. The categorical breakdown for 100% of a student's overall grade is calculated by the following: formative assessment is 50% and summative is 50%. A student receives a grade of A, B, C, D, or F for each semester.

**Characteristics of students.** The characteristics of students refer to gender and race.

**Gender of students.** The gender of students refer to whether students are female or male.

**Race of students.** The race of students refer to whether students are American Indian, Asian, Black, Latino, Multiracial or White.

**Comparison group.** Students in seventh and eighth grade are enrolled in a Language Arts course taught from the Pearson MyPerspectives curriculum. All students complete the same reading assessments, coursework, and homework as other seventh and eighth grade Language Arts courses irrespective of grade level. All classes use common rubrics for assessments. The course is a yearlong class and is a double block period (90 minutes) taught by a reading teacher.

These students were placed in Language Arts without intervention based on their NWEA-MAP spring reading composite RIT score administered in May of the previous

school year. These students all scored above the 50th percentile and will be identified as non-SuccessMaker users.

**Investigational group.** Students in seventh and eighth grade have the same course experiences but are placed in SuccessMaker Reading during Pirate Time based on their NWEA-MAP spring reading composite score administered in May of the previous school year. Students that have an NWEA-MAP reading composite RIT score at or below the 50th percentile are placed into Pirate Time.

Pirate Time is a semester/yearlong course combined with their Language Arts course. The class is a 25-minute period where students work on SuccessMaker Reading. Students have the opportunity to move out of Pirate Time if they receive an A or B in their first semester of their Language Arts course or if they score above the 50th percentile on the NWEA-MAP winter assessment in January. Students are also placed into the intervention class during the year if they fail Language Arts during a quarter. These students will be identified as SuccessMaker users.

## Data Collection

Written permission was requested from the Midwestern suburban school district superintendent to collect and analyze the data. Approval was granted by the district's superintendent. Data was collected from the class of 2018 and 2019. The district provided student data from a data management system which included the student demographic data (i.e., gender and race for the 2018 and 2019 and students' grade), 2017 NWEA-MAP spring reading assessment RIT composite score, 2018 NWEA-MAP winter reading assessment RIT composite score, students' first and second quarter Language Arts course

grade, students' first semester Language Arts course grade, students' MyPerspectives pre and post assessment data. The researcher also collected the incremental growth in SuccessMaker Reading and time spent in SuccessMaker Reading from Pearson. Access to this data was approved by the Internal Review Board (IRB) of Loyola University Chicago.

## Data Analysis Procedures

This study used Statistical Package for the Social Sciences (SPSS) software to analyze data. An Excel spreadsheet of data was created and then input into the SPSS system. The Excel database used the following variables: (1) ID number for confidentiality of each participant, (2) indication if participant is in the investigational (0) or comparison group (1), (3) participant's gender M (0) or F (1), (4) participant's race/ethnicity White (0), Black (1), Latino (2), Asian (3), Multiracial (4), American Indian (5), (5) student $7^{th}$ grade 2019 (7), $8^{th}$ grade 2018 (8), (6) $7^{th}$ and $8^{th}$ grade numerical NWEA-MAP spring composite RIT reading score (1-265), (7) $7^{th}$ and $8^{th}$ grade numerical NWEA-MAP winter composite RIT reading score (1-265), (8) $1^{st}$ and $2^{nd}$ quarter Language Arts course grade [A (4), B (3), C (2), D (1) or F (0)], (9) $1^{st}$ semester Language Arts course grade [A (4), B (3), C (2), D (1) or F (0)], (10) MyPerspectives pre and post assessment grade numerical value [A (4), B (3), C (2), D (1) or F (0)], (11) numerical value measured in minutes for time spent in SuccessMaker Reading (0-infinite), and (12) numerical value for topics mastered in SuccessMaker Reading (0-N).

Reading growth calculations from the NWEA-MAP will be determined using the composite reading RIT scores from this assessment. After the data was entered, the following analyses were conducted to answer the research questions.

Statistical analysis was completed in five areas: (1) composite reading growth from the NWEA-MAP spring and winter reading assessments, (2) percent reading growth from the NWEA-MAP spring and winter reading assessments, (3) the gap statistic, (4) MyPerspectives pre and post assessments, and (5) Language Arts 1st and 2nd quarter course grades and 1st semester course grade.

Do Language Arts students who use SuccessMaker Reading during Pirate Time demonstrate improvement as measured by student reading growth on NWEA-MAP reading assessment and how do these results compare to non-SuccessMaker Reading students?

Descriptive statistics (mean, median, standard deviation, etc.) were used to determine if Language Arts students who use SuccessMaker Reading demonstrate improvement. Composite reading growth was calculated by utilizing the NWEA-MAP winter composite reading score minus the NWEA-MAP spring composite reading score. Percent reading growth was calculated by utilizing (the NWEA-MAP winter composite reading score minus the NWEA-MAP spring composite reading score) / the NWEA-MAP winter composite reading score, multiplied by 100. The researcher also compared these results to those of non-SuccessMaker students' composite and percent reading scores in an attempt to contextualize the results.

Is performance by Language Arts students who use SuccessMaker Reading during Pirate Time consistent irrespective of the grade, gender, and race?

The researcher used a one-way analysis of variance (ANOVA) with the NWEA-MAP spring to NWEA-MAP winter composite reading growth or percent reading growth as the dependent variable and with the independent variable being grade, gender, or race. Statistical significance will be assessed at the 5% level.

Are Language Arts students who use SuccessMaker Reading during Pirate Time able to improve performance relative to non-SuccessMaker Reading students as measured by pre-defined gap statistic and if so, to what degree?

The researcher used the predefined gap statistic. The gap statistic was calculated by 1 - [(mean non-SuccessMaker users' NWEA-MAP winter composite reading score - mean SuccessMaker users' NWEA-MAP winter composite reading score)] / [(mean non-SuccessMaker user's' NWEA-MAP spring composite reading score - mean SuccessMaker user's' NWEA-MAP spring composite reading score)]. The gap statistic was used to determine if SuccessMaker users were able to close the gap with non-SuccessMaker users on the NWEA-MAP spring and winter reading assessments.

Do Language Arts students who use SuccessMaker Reading during Pirate Time demonstrate growth on Language Arts pre and post assessments, quarter and semester grades and how do these results compare to non-SuccessMaker Reading students?

The researcher used descriptive statistics to determine a mean, median, standard deviation to determine if Language Arts pre and post assessments, quarter and semester grades were affected by SuccessMaker Reading. Language Arts assessments consisted of

the MyPerspectives pre and post assessments. The MyPerspectives pre and post assessments were coded numerically A (4), B (3), C (2), D (1) and F (0). Frequency distributions were used to determine the frequency of percentage grades by the MyPerspectives pre and post assessments. The researcher will then compare that to non-SuccessMaker students' MyPerspectives pre and post assessment grades.

The 1st and 2nd quarter and 1st semester grades were coded numerically A (4), B (3), C (2), D (1) and F (0). The researcher examined the difference in 1st and 2nd quarter and 1st semester course grades. Frequency distributions were used to determine the frequency of letter grades by each quarter and 1st semester. The researcher then compared that to non-SuccessMaker students' quarter and semester course grades.

Is there a statistically significant association between NWEA-MAP reading growth and time spent on SuccessMaker Reading by students during Pirate Time?

The research question was addressed using the Pearson Correlation. Correlations determined if there is a gap between NWEA-MAP reading composite or percent reading growth and time spent on SuccessMaker Reading by students during Pirate Time. Statistical significance was assessed at the 5% level.

Is there a statistically significant relationship between NWEA-MAP reading growth and incremental growth by students who use SuccessMaker Reading during Pirate Time?

The research question was addressed using the Pearson Correlation. Correlations determined if there is a gap between NWEA-MAP reading composite or percent reading

growth and incremental growth on SuccessMaker Reading by students during Pirate Time. Statistical significance was assessed at the 5% level.

## Protection of Human Subjects

Permission for the use of data was granted by the Midwestern suburban school district. All student names were removed from data and replaced with an id number. All data was kept confidential and secured on a flash drive that was kept in a locked drawer. The researcher completed the Citi online tutorial for Research in Protecting Human Research Participants.

## Assumptions

The assumptions made at the time of this study were that all teachers implemented SuccessMaker Reading with fidelity and used intervention data to inform instructional practices to meet the needs of their students. Additional assumptions are that all students actively engaged and performed to the best of their ability in their courses and on assessments. SuccessMaker users also performed to the best of their ability on SuccessMaker Reading and utilized time properly in Pirate Time.

The delimitation of this study is that there was only one middle school and two grades of students being examined. The study was delimited to the eighth grade cohort of 2018 and seventh grade cohort of 2019. Information was delimited to those students who took the MyPerspectives pre and post assessments in Language Arts courses, the NWEA-MAP spring and winter reading assessments, SuccessMaker users, and non-SuccessMaker users.

The limitations of this study did not control for learning experiences outside of the classroom. The study did not control time spent or incremental growth in SuccessMaker Reading mastered by students or time spent outside the school day on Language Arts skills.

## Conclusion

This quasi-experimental, quantitative study was performed using data from a Midwestern suburban middle school. The comparison and the investigational group consisted of students from the same Midwestern suburban middle school. The school was a suburban middle school where 6.3% of the students are White, 38.9% are Black, and 47.5% are Latino. The investigational group was composed of students using SuccessMaker Reading computer software during Pirate time. The comparison group consisted of students enrolled in a Language Arts course who did not use SuccessMaker Reading computer software during Pirate Time.

This study will use data from the NWEA-MAP spring and winter reading assessments, Language Arts 1st and 2nd quarter and 1st semester course grades, MyPerspectives pre and post assessments, gender, race, incremental growth in SuccessMaker Reading, and time spent in SuccessMaker Reading. Statistical analysis was completed on this data. Chapter III described how the researcher designed the study, selected the participants and how the data was analyzed.

# CHAPTER IV

# FINDINGS

## Introduction

The purpose of this quasi experimental study was to determine if SuccessMaker Reading had an effect on at-risk students when used with a seventh or eighth grade Language Arts course. This study analyzed if SuccessMaker Reading had an effect on student growth on the NWEA-MAP spring to winter reading assessments, the MyPerspectives pre and post assessments, and Language Arts quarter and semester course grades compared to students in a Language Arts course who did not utilize SuccessMaker Reading. This study examined the following questions.

## Research Questions

1. Do Language Arts students who use SuccessMaker Reading during Pirate Time demonstrate improvement as measured by student reading growth on NWEA-MAP reading assessment and how do these results compare to non-SuccessMaker Reading students?
2. Is performance by Language Arts students who use SuccessMaker Reading during Pirate Time consistent irrespective of the grade, gender, and race?
3. Are Language Arts students who use SuccessMaker Reading during Pirate Time able to improve performance relative to non-SuccessMaker Reading students as measured by a pre-defined gap statistic and if so, to what degree?

4. Do Language Arts students who use SuccessMaker Reading during Pirate Time demonstrate growth on Language Arts pre and post assessments, quarter and semester grades and how do these results compare to non-SuccessMaker Reading students?
5. Is there a statistically significant association between NWEA-MAP reading growth and time spent on SuccessMaker Reading by students during Pirate Time?
6. Is there a statistically significant relationship between NWEA-MAP reading growth and incremental growth by students who use SuccessMaker Reading during Pirate Time?

This study utilized descriptive statistics to analyze the demographic data, NWEA-MAP spring and winter composite reading scores, Language Arts quarter and semester course grades, MyPerspectives pre and post assessments, composite reading growth, and percent reading growth. An ANOVA was utilized to analyze composite reading and percent reading growth among levels of grade, gender and race. A Pearson Correlation was calculated to analyze the association of NWEA-MAP reading growth and time spent on SuccessMaker Reading and incremental growth occurred by students.

SuccessMaker users (investigational group) consisted of 359 seventh and eighth grade Language Arts students who utilized SuccessMaker Reading during Pirate Time from a Midwestern middle school. The students scored at or below the 50$^{th}$ percentile on NWEA-MAP spring reading assessment administered in May of the previous school year. Non-SuccessMaker users (comparison group) consisted of 189 students enrolled

only in a Language Arts course. These students scored above the 50th percentile on NWEA-MAP spring reading assessment administered in May of the previous school year. The school district's data system was accessed to obtain student characteristics and performance data.

## Demographic Characteristics

Table 3 displays the sample of this study. The data is comprised of 548 seventh and eighth graders from the classes of 2018 and 2019 from a Midwestern suburban middle school district. SuccessMaker users consisted of 359 seventh and eighth grade Language Arts students enrolled in SuccessMaker Reading during Pirate Time. The non-SuccessMaker users consisted of 189 seventh and eighth grade Language Arts students.

Table 3

*Frequency Distribution of Study Subjects*

| Category | Number | Percent |
|---|---|---|
| SuccessMaker users | 359 | 65.5 |
| non-SuccessMaker users | 189 | 34.5 |
| Total | 548 | 100.00 |

Table 4 displays the gender of the sample, SuccessMaker users consisted of 186 male students (51.5%) and 174 female students (48.5%). The non-SuccessMaker users consisted of 89 male students (47.1%) and 100 female students (52.9%). Both groups contained about 50% of each gender.

Table 4

*Frequency Distribution of Study Subjects by Gender*

| | SuccessMaker users | | non-SuccessMaker users | |
|---|---|---|---|---|
| Variable | N | % | N | % |
| Male | 185 | 51.5 | 89 | 47.1 |
| Female | 174 | 48.5 | 100 | 52.9 |
| Total | 359 | 100.00 | 189 | 100.00 |

Table 5 displays the sample size and percentage of total seventh and eighth grade students' races. The study sample was consistent with the middle school's population. There was a slightly higher percentage of Latino and white students in the non-SuccessMaker users compared to SuccessMaker users and a higher percentage of black students in SuccessMaker users compared to non-SuccessMaker users.

Table 5

*Frequency Distribution of Study Subjects by Race*

| | SuccessMaker users | | non-SuccessMaker users | |
|---|---|---|---|---|
| Race | | | | |
| | N | % | N | % |
| American Indian | 1 | 0.3 | 0 | 0.0 |
| Asian | 0 | 0.0 | 0 | 0.0 |
| Black | 168 | 46.8 | 69 | 36.5 |
| Latino | 162 | 45.1 | 93 | 49.2 |
| Multiracial | 17 | 4.7 | 11 | 5.8 |
| White | 11 | 3.1 | 16 | 8.5 |

Table 6 displays the breakdown of demographics by grade. In seventh grade, there were 171 SuccessMaker users and 73 non-SuccessMaker users. In eighth grade, there were 188 SuccessMaker users and 116 non-SuccessMaker users. The SuccessMaker users and non-SuccessMaker users were broken down by gender and race for each individual grade.

Table 6

*Demographics for SuccessMaker Users and non-SuccessMaker Users in 7th and 8th Grade*

| Race | Gender | 7 | | 8 | | Total | | |
|---|---|---|---|---|---|---|---|---|
| | | S | nS | S | nS | S | nS | Total |
| Am | M | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | F | 0 | 0 | 1 | 0 | 1 | 0 | 1 |
| As | M | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | F | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| B | M | 41 | 15 | 50 | 15 | 91 | 30 | 121 |
| | F | 38 | 16 | 39 | 23 | 77 | 39 | 116 |
| L | M | 41 | 19 | 38 | 27 | 79 | 46 | 125 |
| | F | 40 | 15 | 43 | 32 | 83 | 47 | 130 |
| Mr | M | 3 | 2 | 7 | 4 | 10 | 6 | 16 |
| | F | 2 | 0 | 5 | 5 | 7 | 5 | 12 |
| W | M | 2 | 1 | 3 | 6 | 5 | 7 | 12 |
| | F | 4 | 5 | 2 | 4 | 6 | 9 | 15 |
| Total | | 171 | 73 | 188 | 116 | 35 | 189 | 548 |

*Note.* An = American Indian As = Asian; B = Black; L = Latino; Mr = Multiracial; W = White; M = male; F = female; S = SuccessMaker users; nS = non-SuccessMaker users.

Tables were created to answer each research question. Some students were omitted in research questions because they were missing NWEA-MAP spring or winter reading scores, Language Arts quarter course grades, Language Arts semester course

grades, or MyPerspectives pre or post assessments. For example, if students were missing their Language Arts semester grade their mean of change could not be calculated. These students would have been omitted for research question 4.

## Data Analysis

### Research Question 1

The first research question asked: Do Language Arts students who use SuccessMaker Reading during Pirate Time demonstrate improvement as measured by student reading growth on the NWEA-MAP reading assessment and how do these results compare to non-SuccessMaker Reading students? SuccessMaker users (investigational group) and non-SuccessMaker users (comparison group) were examined. Students who did not take the NWEA-MAP spring reading assessment, NWEA-MAP winter reading assessment or both were omitted from final analysis. Results of SuccessMaker users and non-SuccessMaker users were calculated for students who took both the NWEA-MAP spring reading assessment and NWEA-MAP winter reading assessment. The results were presented by all grades and by seventh and eighth grade.

Descriptive statistics (mean, median, and standard deviation) were utilized to determine if SuccessMaker users demonstrated improvement from the NWEA-MAP spring reading assessment to the NWEA-MAP winter reading assessment. Results were compared to those of non-SuccessMaker users.

At the beginning of the study, all grades had 359 SuccessMaker users and 189 non-SuccessMaker users. In Table 7, 72 SuccessMaker users were missing their NWEA-MAP spring reading RIT score, NWEA-MAP winter reading RIT score or both the

NWEA-MAP spring and winter reading RIT scores. A total of 25 non-SuccessMaker users were missing their NWEA-MAP spring reading RIT score, NWEA-MAP winter reading RIT score or both the NWEA-MAP spring and winter reading RIT scores. These students were not calculated for composite reading growth and percent reading growth.

Table 7

*All Grades Mean, Median, and Standard Deviation for Composite Reading Growth and Percent Reading Growth*

| Grade | Growth | SuccessMaker users | | | non-SuccessMaker users | | |
|---|---|---|---|---|---|---|---|
| | | M | Mdn | SD | M | Mdn | SD |
| 7 | CRG | 2.88 | 3.00 | 12.12 | .55 | 1.00 | 6.08 |
| | PRG | 1.00 | 1.40 | 6.14 | .07 | .44 | 2.77 |
| 8 | CRG | 7.29 | 7.50 | 9.63 | .67 | 1.00 | 7.57 |
| | PRG | 3.30 | 3.37 | 4.74 | .13 | .42 | 3.44 |
| All | CRG | 5.18 | 6.00 | 11.09 | .62 | 1.00 | 6.97 |
| | PRG | 2.20 | 2.81 | 5.57 | .10 | .42 | 3.17 |

*Note.* CRG = Composite reading growth; PRG = Percent reading growth.

All grades had a total of 287 SuccessMaker users and 134 non-SuccessMaker users (see Appendix A, Table A1). For composite reading growth, the mean SuccessMaker user score (M = 5.18, Mdn = 6.00, SD = 11.09) was higher than the mean non-SuccessMaker user score (M = .62, Mdn = 1.00, SD = 6.97) (see Table 7). SuccessMaker users performed better on the NWEA-MAP winter reading assessment than non-SuccessMaker users. For percent reading growth, the mean SuccessMaker user

score (M = 2.20, Mdn = 2.81, SD = 5.57) was higher than the mean non-SuccessMaker user score (M = .10, Mdn = .42, SD = 3.17) (see Table 7). SuccessMaker users grew at a higher percentage on the NWEA-MAP winter reading assessment than non-SuccessMaker users.

Seventh grade had 171 SuccessMaker users and 73 non-SuccessMaker users. There were 33 SuccessMaker users and 4 non-SuccessMaker users missing their NWEA-MAP spring reading assessment score, NWEA-MAP winter reading assessment score or both. These students were not calculated for composite reading growth and percent reading growth (See Appendix A, Table A2).

For composite reading growth, the mean SuccessMaker user score (M = 2.88, Mdn = 3.00, SD = 12.12) was higher than the mean non-SuccessMaker user score (M = .55, Mdn = 1.00, SD = 6.08) (see Table 7). SuccessMaker users performed better on the NWEA-MAP winter reading assessment than non-SuccessMaker users. For percent reading growth, the mean SuccessMaker user score (M = 1.00, Mdn = 1.40, SD = 6.14) was higher than the mean non-SuccessMaker user score (M = .07, Mdn = .44, SD = 2.77) (see Table 7). SuccessMaker users grew at a higher rate on the NWEA-MAP winter reading assessment than non-SuccessMaker users.

Eighth grade had 188 SuccessMaker users and 116 non-SuccessMaker users. There were 39 SuccessMaker users and 21 non-SuccessMaker users missing their NWEA-MAP spring reading assessment score, NWEA-MAP winter reading assessment score or both. These students were not calculated for composite reading growth and percent reading growth (see Appendix A, Table A3).

For composite reading growth, the mean SuccessMaker user score (M = 7.29, Mdn = 7.50, SD = 9.63) was higher than the mean non-SuccessMaker user score (M = .67, Mdn = 1.00, SD = 7.57) (see Table 7). SuccessMaker users performed better on the NWEA-MAP winter reading assessment than non-SuccessMaker users. For percent reading growth, the mean SuccessMaker user score (M = 3.30, Mdn = 3.37, SD = 4.74) was higher than the mean non-SuccessMaker user score (M = .13, Mdn = .42, SD = 3.44) (see Table 7). SuccessMaker users grew at a higher rate on the NWEA-MAP winter reading assessment than non-SuccessMaker users.

**Research Question 2**

The second research question asked: Is performance by Language Arts students who use SuccessMaker Reading during Pirate Time consistent irrespective of the grade, gender, and race? A one-way analysis of variance (ANOVA) was performed. In the first analysis, the dependent variable was NWEA-MAP spring to NWEA-MAP winter composite reading growth and the independent variable was grade, gender, or race (see Appendix B, Tables B1-B7). Statistical significance was assessed at the 5% level.

Statistically significant differences were observed in composite reading growth for all grades [$F(1, 85) = 11.708$, $p = .001$] (see Appendix B, Table B1), combined 7$^{th}$ and 8$^{th}$ grade gender [$F(1, 285) = 5.403$, $p = .021$] (see Appendix B, Table B2), and combined 7$^{th}$ and 8$^{th}$ grade race [$F(3, 283) = 3.112$, $p = .027$] (see Appendix B, Table B5).

Additional ANOVAs were performed to examine differences in composite reading growth based on gender and race within individual grades. Statistically significant differences were identified for 7$^{th}$ grade gender [$F(1, 135) = 4.024$, $p = .047$]

(see Appendix B, Table B4) and 8th grade race [$F(3, 146) = 3.635$, $p = .014$] (see Appendix B, Table B6). No statistically significant differences were identified in composite reading growth for 8th grade gender [$F(1, 87) = .148$, $p = .702$] (see appendix B, Table B3), 7th grade race [$F(3, 133) = 1.523$, $p = .211$] (see Appendix B, Table B7). The ANOVA tables for composite reading growth are found in Appendix B, Tables B1-B7.

In the second analysis, the dependent variable was NWEA-MAP spring to NWEA-MAP winter percent reading growth and the independent variable was grade, gender, or race (see Appendix B, Tables B8-B14). Statistical significance was assessed at the 5% level.

Statistically significant differences were identified in percent reading growth for all grades [$F(1, 290) = 12.887$, $p = .000$] (see Appendix B, Table B8), combined 7th and 8th grade gender [$F(1, 290) = 4.900$, $p = .028$] (see Appendix B, Table B9), and combined 7th and 8th grade race [$F(3, 288) = 3.185$, $p = .024$] (see Appendix B, Table B12).

Additional ANOVAs were performed to examine potential differences in percent reading growth based on gender and race within individual grades. Statistically significant difference were identified for 7th grade gender [$F(1, 138) = 3.744$, $p = .054$] (see Appendix B, Table B11) and 8th grade race [$F(3, 148) = 3.994$, $p = .009$] (see Appendix B, Table B13). No statistically significant differences were identified in percent reading growth for 8th grade gender [$F(1, 150) = 1.673$, $p = .198$] (see Appendix B, Table B10), 7th grade race [$F(3, 136) = 1.553$, $p = .204$] (see Appendix B, Table B14). The ANOVA tables for percent reading growth are found in Appendix B, Tables B8-B14.

**Research Question 3**

The third research question asked: Are Language Arts students who use SuccessMaker Reading during Pirate Time able to improve performance relative to non-SuccessMaker Reading students as measured by pre-defined gap statistic and if so, to what degree? The gap statistic was calculated by 1 - [(mean non-SuccessMaker users' NWEA-MAP winter composite reading score - mean SuccessMaker users' NWEA-MAP winter composite reading score)] / [(mean non-SuccessMaker users' NWEA-MAP spring composite reading score - mean SuccessMaker users' NWEA-MAP spring composite reading score)]. The results were analyzed to determine if SuccessMaker users were able to close the initial gap that existed between non-SuccessMaker users on the NWEA-MAP spring reading assessment.

The mean non-SuccessMaker users' NWEA-MAP spring composite reading score was 224.30. The mean non-SuccessMaker users' NWEA-MAP winter composite reading score was 223.41. The mean SuccessMaker users' NWEA-MAP spring composite reading score was 202.52. The mean SuccessMaker users' NWEA-MAP winter composite reading score was 208.39. The calculated gap statistic was .310 (see Appendix C). SuccessMaker users were able to close the initial gap that existed on the NWEA-MAP spring reading assessment with non-SuccessMaker users by 31.0% when taking the NWEA-MAP winter reading assessment.

**Research Question 4**

The fourth research question asked: Do Language Arts students who use SuccessMaker Reading during Pirate Time demonstrate growth on Language Arts pre

and post assessments, quarter and semester grades and how do these results compare to non-SuccessMaker Reading students?

Table 8 displays a frequency distribution for SuccessMaker Reading users and non-SuccessMaker Reading users Language Arts pre and post assessments. The pre and post assessments were administered using the MyPerspectives assessments.

Table 8

*Language Arts MyPerspectives Pre-Assessment and Post-Assessment Grades*

| | | 7th Grade | | | | 8th Grade | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | preS | prenS | postS | postnS | preS | prenS | postS | postnS |
| MyPerspectives assessment grade | A | 3 | 0 | 4 | 2 | 0 | 0 | 6 | 2 |
| | B | 4 | 3 | 16 | 7 | 3 | 1 | 21 | 9 |
| | C | 4 | 2 | 13 | 8 | 13 | 7 | 15 | 12 |
| | D | 18 | 7 | 18 | 13 | 31 | 13 | 35 | 15 |
| | F | 119 | 43 | 89 | 24 | 107 | 81 | 73 | 55 |
| | Total | 148 | 55 | 140 | 54 | 154 | 102 | 150 | 93 |

*Note.* preS = pretest SuccessMaker users 7th graders (n = 148) and 8th graders (n = 154); prenS = pretest non-SuccessMaker users 7th grade (n = 55) and 8th grade (n = 102); postS = posttest SuccessMaker users 7th grade (n=140) and 8th grade (n = 54); postnS = posttest non-SuccessMaker users 7th grade (n = 54) and 8th grade (n = 93).

Grades on the MyPerspectives pre and post assessments for SuccessMaker Reading users and non-SuccessMaker Reading users improved. These results were consistent amongst 7th and 8th grade students. All individual letter grades with regard to A's, B's, C's, D's, and F's increased (see Appendix D, Tables D1-D6 for a breakdown of letter grades by individual grades). Students improved on the MyPerspectives pre to post

assessment most likely because they gained the knowledge and skills to be more successful. When the assessment was administered at the beginning of the year, many students did not have the skills to perform well. When the assessment was administered in the middle of the year, students are able to learn and acquire the skills to be successful.

In Table 9, the MyPerspectives pre assessment mean SuccessMaker users score (M = .35, Mdn = .00, SD = .78) was higher than the mean non-SuccessMaker users score (M = .32, Mdn = .00, SD = .70). The MyPerspectives post assessment mean SuccessMaker users score (M = .69, Mdn = .00, SD = .70) was lower than the mean non-SuccessMaker users score (M = .90, Mdn = .00, SD = 1.16). See Appendix D, Table D24 and D25 for mean, median, and standard deviation of each individual grade.

Table 9

*Mean, Median, and Standard Deviation for MyPerspectives Pre and Post Assessments*

| | SuccessMaker users | | | Non-SuccessMaker users | | |
|---|---|---|---|---|---|---|
| | M | Mdn | SD | M | Mdn | SD |
| MyPerspectives pre assessment | .35 | .00 | .78 | .32 | .00 | .70 |
| MyPerspectives post assessment | .69 | .00 | 1.21 | .90 | .00 | 1.16 |

In Table 10, the MyPerspectives pre to post assessment mean change for SuccessMaker users score (M = .61) was slightly higher than the mean non-SuccessMaker users score (M = .58). This is likely due to the fact that the SuccessMaker users score was lower to begin with than non-SuccessMaker users score (see Appendix D, Table D23 for the mean for each individual grade).

Table 10

*Mean of All Grades for MyPerspectives Pre and Post Assessments*

| | SuccessMaker users | non-SuccessMaker users |
|---|---|---|
| Pre-Post Mean Change | .61 | .58 |

In Table 11, a frequency distribution displays the grades for SuccessMaker and non-SuccessMaker users for Language Arts 1st quarter grade, Language Arts 2nd quarter grade, and Language Arts 1st semester course grade.

Grades for SuccessMaker and non-SuccessMaker users improved from 1st quarter to 2nd quarter. Quarter grades when compared with the 1st semester course grades remained relatively constant. The percentage of students receiving D's and F's decreased in SuccessMaker and non-SuccessMaker users. Students in 7th grade performed better in Language Arts then their 8th grade counter parts and received less D's and F's. See Appendix D, Tables D7-D21 for a breakdown of letter grades and percentages by individual grades.

Table 11

*Language Arts Grades for All Grades of SuccessMaker and non-SuccessMaker Users*

| Grades | SuccessMaker users | | | non-SuccessMaker users | | |
|---|---|---|---|---|---|---|
| | Q1 | Q2 | S1 | Q1 | Q2 | S1 |
| A | 21 | 33 | 20 | 32 | 40 | 41 |
| | (5.9%) | (9.3%) | (5.6%) | (21.3%) | (21.2%) | (21.7%) |
| B | 85 | 98 | 76 | 58 | 66 | 72 |
| | (24.0%) | (27.5%) | (24.2%) | (42.6%) | (34.9%) | (38.1%) |
| C | 104 | 117 | 118 | 71 | 47 | 40 |
| | (29.4%) | (32.9%) | (33.1%) | (17.0%) | (24.9%) | (21.2%) |
| D | 76 | 67 | 82 | 54 | 22 | 22 |
| | (21.5%) | (18.8%) | (23.0%) | (17.0%) | (11.6%) | (11.6%) |
| F | 68 | 41 | 50 | 45 | 14 | 14 |
| | (19.2%) | (11.5%) | (14.0%) | (6.4%) | (7.4%) | (7.4%) |
| Total | 354 | 356 | 356 | 188 | 189 | 189 |

*Note.* Q1 = Quarter 1, Q2 = Quarter 2, and S1 = Semester 1.

In Table 12, the Language Arts 1st quarter grade mean SuccessMaker users score (M = 2.60, Mdn = 3.00, SD = 1.15) was higher than the mean non-SuccessMaker users score (M = 1.76, Mdn = 2.00, SD = 1.19). The Language Arts 2nd quarter grade mean SuccessMaker users score (M = 2.51, Mdn = 3.00, SD = 1.17) was higher than the non-SuccessMaker users score (M = 2.04, Mdn = 2.00, SD = 1.14). The Language Arts 1st semester grade mean SuccessMaker users score (M = 2.55, Mdn = 3.00, SD = 1.17) was higher than the mean non-SuccessMaker users score (M = 1.84, Mdn = 2.00, SD = 1.11) (see Appendix D, Table D24 and D25 for mean, median, and standard deviation for each individual grade).

Table 12

*Mean, Median, and Standard Deviation for Language Arts Grades*

| | SuccessMaker users | | | non-SuccessMaker users | | |
|---|---|---|---|---|---|---|
| | M | Mdn | SD | M | Mdn | SD |
| 1st quarter grade | 2.60 | 3.00 | 1.14 | 1.76 | 2.00 | 1.19 |
| 2nd quarter grade | 2.51 | 3.00 | 1.17 | 2.04 | 2.00 | 1.14 |
| 1st semester grade | 2.55 | 3.00 | 1.17 | 1.84 | 2.00 | 1.11 |

*Note.* SuccessMaker users 1st quarter (n = 354), SuccessMaker users 2nd quarter (n = 356) and SuccessMaker users 1st semester (n = 356). non-SuccessMaker users 1st quarter (n = 188), SuccessMaker users 2nd quarter (n = 189) and non-SuccessMaker users 1st semester (n = 189). Mean and median scores for grades represent 0 = F, 1 = D, 2 = C, 3 = B, and 4 = A.

In Table 13, the Language Arts 1st quarter to Language Arts 2nd quarter mean change for SuccessMaker users score (M = 1.94) was lower than the quarter mean change for non-SuccessMaker users score (M = 2.55). See Appendix D, Table D23 for the mean of each individual grade.

Table 13

*Mean of All Grades for 1st Quarter to 2nd Quarter Grade Change*

| | SuccessMaker users | non-SuccessMaker users |
|---|---|---|
| Quarter Mean Change | 1.90 | 2.55 |

In Table 14, the Language Arts 1st quarter to Language Arts 1st semester mean change for SuccessMaker users score (M = 1.80) was lower than the 1st quarter to 1st

semester mean change for non-SuccessMaker users score (M = 2.57). See Appendix D, Table D23 for the mean of each individual grade.

Table 14

*Mean of All Grades for 1st Quarter to 1st Semester Grade Change*

| | SuccessMaker users | non-SuccessMaker users |
|---|---|---|
| 1st Quarter to 1st Semester Mean Change | 1.80 | 2.57 |

In Table 15, the Language Arts 2nd quarter to Language Arts 1st semester mean change for SuccessMaker users score (M = 1.94) was lower than the 2nd quarter to 1st semester mean change for non-SuccessMaker users score (M = 2.53). See Appendix D, Table D23 for the mean of each individual grade.

Table 15

*Mean of All Grades for 2nd Quarter to 1st Semester Grade Change*

| | SuccessMaker users | non-SuccessMaker users |
|---|---|---|
| 2nd Quarter to 1st Semester Mean Change | 1.94 | 2.53 |

**Research Question 5**

The fifth research question asked: Is there a statistically significant association between NWEA-MAP reading growth and time spent on SuccessMaker Reading by students during Pirate Time? A Pearson correlation coefficient was calculated using the

NWEA-MAP spring and winter reading assessments composite reading growth or NWEA-MAP spring and winter reading assessments percent reading growth and time spent on SuccessMaker Reading. Statistical significance was assessed at the 5% level.

Table 16 displays the Pearson correlation coefficients and two-tailed p-values for composite reading growth. Results show that composite reading growth by SuccessMaker users did have a statistically significant correlation to time spent on SuccessMaker Reading for all grades of SuccessMaker users and for 7th grade SuccessMaker users. There was a relationship between the variables. Both *p* values were less than .05.

Table 16

*Correlations of Composite Reading Growth and Time Spent in SuccessMaker Reading*

| Grade | 7 | 8 | Total |
|---|---|---|---|
| Pearson Correlation | .348 | -.073 | .144 |
| Sig. (2-tailed) | .000 | .380 | .015 |
| N | 136 | 148 | 284 |

Eighth grade SuccessMaker users composite reading growth did not have a statistically significant correlation to time spent on SuccessMaker Reading. There was no relationship between the variables. The *p* value was greater than .05 (see Appendix E, Tables E1-E3 for individual breakdown of each grade level).

Table 17 displays the Pearson correlation coefficients and two-tailed p-values for percent reading growth. Results show that percent reading growth by SuccessMaker users did have a statistically significant correlation to time spent on SuccessMaker Reading for

all grades of SuccessMaker users and for 7th grade SuccessMaker users. There was a relationship between the variables. Both *p* values were less than .05.

Table 17

*Correlations of Percent Reading Growth and Time Spent in SuccessMaker Reading*

| Grade | 7 | 8 | All |
|---|---|---|---|
| Pearson Correlation | .334 | -.072 | .139 |
| Sig. (2-tailed) | .000 | .384 | .018 |
| N | 139 | 150 | 289 |

Eighth grade SuccessMaker users' percent reading growth did not have a statistically significant correlation to time spent on SuccessMaker Reading. There was no relationship between the variables. The *p* value was greater than .05 (see Appendix E, Tables E4-E6 for individual breakdown of each grade level).

**Research Question 6**

The final research question asked: Is there a statistically significant relationship between NWEA-MAP reading growth and incremental growth by students who use SuccessMaker Reading during Pirate Time? A Pearson correlation coefficient was calculated using the NWEA-MAP spring and winter reading assessments composite reading growth or NWEA-MAP spring and winter reading assessments percent reading growth and incremental growth on SuccessMaker Reading. Statistical significance was assessed at the 5% level.

Table 18 displays the Pearson correlation coefficients and two-tailed p-values for composite reading growth. Results show that composite reading growth by SuccessMaker users did have a statistically significant correlation to incremental growth on SuccessMaker Reading for all grades of SuccessMaker users and for 7th grade SuccessMaker users. There was a relationship between the variables. Both *p* values were less than .05.

Table 18

*Correlations of Composite Reading Growth and Incremental Growth in SuccessMaker Reading*

| Grade | 7 | 8 | All |
|---|---|---|---|
| Pearson Correlation | .373 | -.051 | .157 |
| Sig. (2-tailed) | .000 | .538 | .008 |
| N | 135 | 146 | 281 |

Eighth grade SuccessMaker users' composite reading growth did not have a statistically significant correlation to incremental growth on SuccessMaker Reading. There was no relationship between the variables. The *p* value was greater than .05 (see Appendix F, Tables F1-F3 for individual breakdown of each grade level).

Table 19 displays the Pearson correlation coefficients and two-tailed p-values for percent reading growth. Results show that percent reading growth by SuccessMaker users did have a statistically significant correlation to incremental growth on SuccessMaker

Reading for all grades of SuccessMaker users and for 7th grade SuccessMaker users. There was a relationship between the variables. Both *p* values were less than .05.

Table 19

*Correlations of Percent Reading Growth and Incremental Growth in SuccessMaker Reading*

| Grade | 7 | 8 | Total |
|---|---|---|---|
| Pearson Correlation | .345 | -.033 | .151 |
| Sig. (2-tailed) | .000 | .691 | .011 |
| N | 138 | 148 | 286 |

Eighth grade SuccessMaker users' percent reading growth did not have a statistically significant correlation to incremental growth on SuccessMaker Reading. There was no relationship between the variables. The *p* value was greater than .05 (see Appendix F, Tables F4-F6 for individual breakdown of each grade level).

## Summary

This chapter presented the findings of the analysis of the data collected to answer the six research questions. Descriptive statistics, frequencies, ANOVA, gap statistic, and Pearson Correlations were conducted to determine if SuccessMaker Reading had an effect on growth from the NWEA-MAP reading spring and NWEA-MAP reading winter assessment, MyPerspectives pre and post assessments, and a student's Language Arts course grade compared to students in a Language Arts course who do not use SuccessMaker Reading.

The results indicated that students enrolled in SuccessMaker Reading during Pirate Time had performed better with respect to the mean composite reading and percent reading growth on the NWEA-MAP winter reading assessment than students not enrolled in SuccessMaker Reading during Pirate Time. Both SuccessMaker users and non-SuccessMaker users had positive composite reading and percent reading growth on the NWEA-MAP winter reading assessment. SuccessMaker users had a higher mean composite and percent growth on the NWEA-MAP spring and winter reading assessment than non-SuccessMaker users. SuccessMaker Reading students enrolled during Pirate Time were able to close the gap from the NWEA-MAP spring to winter reading assessments compared to students not enrolled in SuccessMaker Reading during Pirate Time by the predefined gap statistic.

SuccessMaker and non-SuccessMaker users improved on the MyPerspectives pre to post assessment. The MyPerspectives pre assessment mean score (M =.35) for SuccessMaker users was higher than non-SuccessMaker users pre assessment mean score (M = .32). The MyPerspectives post assessment mean score (M = .69) for SuccessMaker users was lower than non-SuccessMaker users post assessment mean score (M = .90). SuccessMaker users MyPerspectives pre to post assessment mean change (M = .61) was slightly higher than the non-SuccessMaker users pre to post assessment mean change (M = .58). SuccessMaker and non-SuccessMaker users improved their 1$^{st}$ quarter to 2$^{nd}$ quarter grades and there was a decrease in D's and F's. SuccessMaker users mean 1$^{st}$ quarter (M = 2.60), 2$^{nd}$ quarter (M = 2.51) and 1$^{st}$ semester mean score (M = 2.55) was higher than non-SuccessMaker users mean 1$^{st}$ quarter (M = 1.76), 2$^{nd}$ quarter (M = 2.04)

and 1st semester mean score (M = 1.84). SuccessMaker users 1st quarter to 2nd quarter (M = 1.90), 1st quarter to 1st semester (M = 1.80), and 2nd quarter to 1st semester mean grade change (M = 1.94) was lower than non-SuccessMaker users 1st quarter to 2nd quarter (M = 2.55), 1st quarter to 1st semester (M = 2.57), and 2nd quarter to 1st semester mean grade change (M = 2.53).

The ANOVA results indicated statistical significance with NWEA-MAP spring to winter reading growth and grade, gender, and race. There was statistical significance on NWEA-MAP spring to winter reading growth and time spent or incremental growth on SuccessMaker Reading. Chapter V will discuss the potential implications of these results.

# CHAPTER V

# SUMMARY OF THE STUDY AND FINDINGS

## Summary of the Study

The purpose of this study was to determine if SuccessMaker Reading had an effect on at-risk reading students when used with a seventh or eighth grade Language Arts course. This study analyzed if SuccessMaker Reading had an effect on composite and percent reading growth from the NWEA-MAP spring to winter reading assessments, the MyPerspectives pre and post assessments, and Language Arts quarter and semester course grades compared to students in a Language Arts course who did not use SuccessMaker Reading in a Midwestern middle school. A brief history about the implementation of the Common Core State Standards (CCSS) for Language Arts was noted.

The RtI model and interventions for students at different levels and tiers was examined. At-risk students and closing the achievement gap between Blacks, Latinos, and Whites present a challenge for all stakeholders involved in education. The literature review consisted of literature closing the achievement gap, improving learners' literacy skills, MyPerspectives Language Arts curriculum, and RtI. Literature was reviewed on integrated learning systems, SuccessMaker Reading, and Critical Theory.

The study sample consisted of approximately 548 students from the seventh and eighth grade classes of 2019 and 2018 in a Midwestern suburban middle school district.

SuccessMaker users consisted of 359 students enrolled in a Language Arts course and SuccessMaker Reading during Pirate Time while non-SuccessMaker users consisted of 189 students enrolled in only a Language Arts course. This quasi-experimental study used a pretest-posttest design. Descriptive statistics, frequencies, ANOVA, a predefined gap statistic, and Pearson correlation coefficients were used to determine if SuccessMaker Reading during Pirate Time had an effect on SuccessMaker users' growth on the NWEA-MAP spring to winter reading assessments, MyPerspectives pre and post assessments, Language Arts quarter and semester course grades compared to non-SuccessMaker users enrolled only in a Language Arts course. Data was collected over the course of five months.

The investigational group (SuccessMaker users) utilized SuccessMaker Reading, a web-based system that supplemented regular reading instruction with targeted instruction, practice and assessment to assist at-risk reading students during Pirate Time. These at-risk students scored at or below the 50$^{th}$ percentile on the NWEA-MAP spring reading assessment administered in the spring of the previous school year. Students in the comparison group (non-SuccessMaker users) scored above the 50$^{th}$ percentile on the NWEA-MAP spring reading assessment administered in the spring of the previous school year. The criteria for placement in SuccessMaker Reading during Pirate Time was predetermined by the building principal of the middle school.

Pirate Time was created to assist in improving reading growth, reading proficiency of the at-risk population of reading students, and to help students reach their NWEA-MAP reading growth goal. The yearlong course was one period and utilized the

web-based system SuccessMaker Reading. This study analyzed if SuccessMaker Reading had an effect on growth from the NWEA-MAP spring to winter reading assessments, the MyPerspectives pre and post assessments, and Language Arts quarter and semester course grades compared to students in a Language Arts course who did not use SuccessMaker Reading.

## Summary of the Findings

This study showed that students enrolled in SuccessMaker Reading during Pirate Time performed better with respect to the mean composite reading growth (M = 5.18) than students enrolled only in a Language Arts course (M = .62) for all grades. This pattern was also observed for each individual grade. Students enrolled in SuccessMaker Reading during Pirate Time performed better with respect to the mean percent reading growth (M = 2.20) than students enrolled only in a Language Arts course (M = .62) in all grades and each individual grade. Overall, SuccessMaker Reading students demonstrated much higher reading growth than non-SuccessMaker Reading students.

Multiple statistically significant differences were observed at the *p* level less than .05 on the NWEA-MAP reading spring to NWEA-MAP reading winter composite reading growth and all grades, combined $7^{th}$ and $8^{th}$ grade gender, combined $7^{th}$ and $8^{th}$ grade race, $7^{th}$ grade gender, and $8^{th}$ grade race. No statistical significant differences were observed on the NWEA-MAP spring to NWEA-MAP winter composite reading growth and $8^{th}$ grade gender and $7^{th}$ grade race. Multiple statistically significant differences were observed at the *p* level less than .05 on the NWEA-MAP spring to NWEA-MAP winter percent reading growth and all grades, combined $7^{th}$ and $8^{th}$ grade gender, combined $7^{th}$

and 8th grade race, 7th grade gender and 8th grade race. No statistically significant differences were observed on the NWEA-MAP spring to NWEA-MAP winter percent reading growth and 8th grade gender and 7th grade race.

The predefined gap statistic utilized in this study demonstrated that SuccessMaker users were able to close the gap on the NWEA-MAP spring reading assessment with non-SuccessMaker users by 31.0%. This suggests that SuccessMaker Reading during Pirate Time can close the achievement gap and equalize the skill deficits that exist between the groups.

SuccessMaker and non-SuccessMaker users improved on the MyPerspectives pre to post assessment. SuccessMaker users MyPerspectives pre to post assessment mean change was slightly higher than the non-SuccessMaker users pre to post assessment mean change. SuccessMaker users mean 1st quarter, 2nd quarter and 1st semester mean score was higher than non-SuccessMaker users mean 1st quarter, 2nd quarter and 1st semester mean score. SuccessMaker users 1st quarter to 1st semester and 2nd quarter to 1st semester mean grade change was lower than non-SuccessMaker users 1st quarter to 1st semester and 2nd quarter to 1st semester mean grade change.

There were statistically significant correlations observed between composite reading growth and time spent on SuccessMaker Reading for all grades and 7th grade students. There was no statistically significant correlation between composite reading growth and time spent on SuccessMaker Reading by 8th grade students. There were statistically significant correlations observed between percent reading growth and time spent on SuccessMaker Reading for all grades and 7th grade students. There was no

statistically significant correlation between percent reading growth and time spent on SuccessMaker Reading by 8th grade students.

There were statistically significant correlations observed between composite reading growth and incremental growth on SuccessMaker Reading for all grades and 7th grade students. There was no statistically significant correlation between composite reading growth and incremental growth on SuccessMaker Reading by 8th grade students. There were statistically significant correlations observed between percent reading growth and incremental growth on SuccessMaker Reading for all grades and 7th grade students. There was no statistically significant correlation between percent reading growth and incremental growth on SuccessMaker Reading by 8th grade students.

## Conclusions of the Study

Administrators and educators must consider implementing reading interventions for students deemed at-risk if closing the achievement gap and improving reading skills is a priority (Calhoon et al., 2013; Herber, 1978; Jencks & Phillips, 1998; Northwest Evaluation Association, 2017; U.S. Department of Education, 2013). Reading is a skill that is required for almost all aspects of life to be an engaged and socially responsive citizen (Franzak, 2006; National Reading Panel, 2000; Snow et al., 1998). Ensuring students have this skill is the responsibility of schools and educators. Reading interventions offer solutions that allow students to navigate printed materials and should therefore be implemented through all grade levels and aligned with the school's curriculum (Hartry et al., 2008; Pearson, 2017a; Soper & Marquis-Cox, 2012). Students with reading difficulties benefit from explicit and systematic intervention organized

around their instructional needs (Edmond et al., 2009; Reschly, 2005). Designing a learning path to meet the needs of each student must be a priority to championing Social Justice (Fullan, 2010; Perry et al., 2003). It is what is fair and it is what is right. All children deserve the opportunity to experience success (Marshall & Oliva, 2010; Mayer, 2002; Mellard et al., 2010; Orfield & Lee, 2005).

Effective instruction takes time, and struggling students need the additional time provided during an intervention to develop missing skills (Brown-Chidsey et al., 2009; Carlson & Francis, 2002; Chall, 2000; Christmann et al., 1997; Lester, 2003; Maiao et al., 2002; Rosenshine et al., 1996). The use of the 25-minute intervention period in this study supports the research that an extended block of time or a separate class assists students (Hong & Hong, 2009; Taylor et al., 1990; Viadero, 2008; Wren, 2002). This research further demonstrated that additional time to work on deficient skills in reading is effective. Students enrolled in SuccessMaker Reading during Pirate Time performed better than students not enrolled in SuccessMaker Reading during Pirate Time. If the goal is to provide all children with equity of opportunity as a socially just society, then we must begin to provide intervention support immediately.

Shannon et al. (2015) discovered that when students engage in computer-assisted learning that incorporates progress monitoring, continuous feedback, and independent reading practice aligned with their interest and ability levels, their reading outcomes increase significantly. This study supports this concept as students in SuccessMaker Reading exhibited growth. Students who participate in computer-based programs have shown better improvement than students who do not participate in computer-based

programs (Gatti Evaluation Inc., 2011; Given et al., 2009; Hannafin & Foshay, 2006; Kulik & Kulik, 1991; Pearson, 2017; Scholastic, 2011; Shannon et al., 2015; The University of Utah Reading Clinic, 2015; U.S. Dept. of Education, 2009). Society has increased the use of technology so it makes perfect sense to implement the use of technology in ways that support learning.

The achievement gap was able to be closed but more still needs to be done. Teacher training is imperative to ensure implementation of interventions with fidelity (Hallinger & Heck, 1998). SuccessMaker Reading did work and other studies show that integrated learning systems do work. As researchers and educators, we must look for multiple ways to meet student needs during the implementation of an intervention. Leaders for social justice investigate and pose solutions for issues that generate and reproduce societal inequities (Marshall & Oliva, 2010). There is not one single solution to address the diverse needs of a student population but morally we have an obligation to ensure that every child has an opportunity to succeed. We must raise the bar and close the achievement gap for all children (Fullan, 2010).

Researchers and educators have a moral obligation to find solutions to close the achievement gap (Goldman, 2012; Fullan, 2010; Marshall & Oliva, 2010; McCray, 2001). Deficiencies in literacy skills have the potential to diminish a student's opportunities not only in school but also in career choice (ACT Corporation, 2008; Carnevale, 2011; National Adult Literacy Survey, 2003). Educating the future must become a greater priority for the good of humankind and we must start now.

## Implications

Data from this study revealed that at-risk reading students improved on NWEA-MAP from spring to winter using SuccessMaker Reading during Pirate Time. At-risk reading students performed better than students who were not enrolled in SuccessMaker Reading and they were able to close the gap. Further investigation is needed to determine why students struggled to perform in their Language Arts course yet grow on the NWEA-MAP reading assessment. Given that Pirate Time has fifteen or less students support that smaller class sizes do better than larger class sizes. Pirate Time was administered as a computer-based intervention with minimal teacher/student interaction, does this indicate better results are due to less traditional methods of instruction or would the outcomes be greater if more traditional methods were included? Given that at-risk students were able to lessen the achievement gap does the research support that they are getting what they need? Due to the variety of different student needs, additional methods may have yielded greater outcomes. However, this study suggest that at-risk student needs were met. SuccessMaker Reading from all indications of this research is high quality when implemented with fidelity and should be expanded down to Elementary schools to address the needs of at-risk students. Elementary schools and middle schools must work together to address prerequisite skills so that students enter middle school prepared.

This study revealed that many students in SuccessMaker Reading received lower grades in their Language Arts course and the grades did not necessarily improve, therefore the curriculum should be reviewed to determine what skills are being assessed at the classroom level and how this assessment contributes to a student's overall success

in school. MyPerspectives is aligned to CCSS but this alignment is not necessarily reflected on the NWEA-MAP reading assessment based on the results of the pre and posttest; although students did grow on the NWEA-MAP reading assessment.

## Recommendations for Future Research

SuccessMaker Reading was implemented for at-risk 7th and 8th grade reading students in a separate class intervention to close the achievement gap. A longitudinal study is recommended beginning in elementary through middle school to determine how students perform over longer periods of time. Researchers should look at SuccessMaker Reading on other school populations such as students above the 50th percentile. More research is needed on SuccessMaker Reading and the NWEA-MAP reading assessment to add to this research and to determine if other Integrated Learning Systems have a greater impact on NWEA-MAP reading growth than SuccessMaker Reading.

Further studies should be conducted on the effectiveness of SuccessMaker Reading and the PARCC reading assessment. Currently many schools use the PARCC reading assessment to measure student achievement and growth however, there is limited literature on this topic. Does using SuccessMaker Reading in a separate class yield more significant results in student growth on the PARCC reading assessment?

Research is needed to determine if ongoing teacher and staff professional development on how to implement SuccessMaker Reading in addition to professional development on how to implement Tier 1 curriculum to differentiate through leveled reading is effective. Additional research is also needed to determine if teachers and staff

who received professional development on strategies and the purpose and function of RtI yield better outcomes.

Although MyPerspectives is aligned to Common Core, research is needed to determine the effects of strategically developing a scope and sequence that encompasses and aligns a variety of standards and the resulting outcomes of student proficiency on NWEA-MAP. This research should also compare and contrast curriculum across multiple districts to provide insight on ways to successfully address concerns in the Tier 1 setting.

Further research is needed on teacher implementation of computer-based interventions in the classroom and not as a separate class. Is the implementation or the program responsible for student growth?

## Conclusion

The purpose of this study was to measure the effectiveness of SuccessMaker Reading during Pirate Time when used in addition to a Language Arts course. This study analyzed if SuccessMaker Reading as a separate class had an effect on RIT growth from the NWEA-MAP spring to winter reading assessment, a student's Language Arts course grade, and MyPerspectives assessments compared to students in a Language Arts course who did not use SuccessMaker Reading.

Students enrolled in SuccessMaker Reading during Pirate Time performed better with respect to the mean composite reading and percent reading RIT growth on the NWEA-MAP winter reading assessment than students who were not enrolled in SuccessMaker Reading during Pirate Time. SuccessMaker users had a higher mean composite and percent RIT growth on the NWEA-MAP winter reading assessment than

non-SuccessMaker users. SuccessMaker Reading students enrolled during Pirate Time were able to close the gap between the NWEA-MAP spring and winter reading assessments compared to students not enrolled in SuccessMaker Reading during Pirate Time by the predefined gap statistic.

SuccessMaker and non-SuccessMaker users improved on the MyPerspectives pre to post assessment.

The Language Arts 1st quarter grade mean SuccessMaker users score was higher than the mean non-SuccessMaker users score. The Language Arts 2nd quarter grade mean SuccessMaker users score was higher than the non-SuccessMaker users score. The Language Arts 1st semester grade mean SuccessMaker users score was higher than the mean non-SuccessMaker users score.

There was statistical significance on the NWEA-MAP winter reading growth and time spent and incremental growth on SuccessMaker Reading. Therefore, the data suggest that SuccessMaker Reading as a separate class intervention assisted students in closing the achievement gap on NWEA-MAP spring to winter reading assessment.

# APPENDIX A

## RESEARCH QUESTION 1 TABLES

Table A1

*All Grades Mean, Median, and Standard Deviation*

| | All Cohorts | | | | | |
|---|---|---|---|---|---|---|
| Growth | SuccessMaker users (n = 359) | | | non-SuccessMaker users (n = 189) | | |
| | M | Mdn | SD | M | Mdn | SD |
| CRG | 5.18 | 6.00 | 11.09 | .62 | 1.00 | 6.97 |
| PRG | 2.20 | 2.81 | 5.57 | .10 | .42 | 3.17 |

*Note.* CRG = Composite reading growth; PRG = Percent reading growth.

Table A2

*7th Grade Mean, Median, and Standard Deviation*

| | 7th Grade Class of 2019 | | | | | |
|---|---|---|---|---|---|---|
| Growth | SuccessMaker users (n = 171) | | | non-SuccessMaker users (n = 73) | | |
| | M | Mdn | SD | M | Mdn | SD |
| CRG | 2.88 | 3.00 | 12.12 | .55 | 1.00 | 6.08 |
| PRG | 1.00 | 1.40 | 6.14 | .07 | .44 | 2.77 |

*Note.* CRG = Composite reading growth; PRG = Percent reading growth.

Table A3

*8th Grade Mean, Median, and Standard Deviation*

| Growth | 8th Grade Class of 2018 | | | | | |
|---|---|---|---|---|---|---|
| | SuccessMaker users (n = 188) | | | non-SuccessMaker users (n = 116) | | |
| | M | Mdn | SD | M | Mdn | SD |
| CRG | 7.29 | 7.50 | 9.63 | .67 | 1.00 | 7.57 |
| PRG | 3.30 | 3.37 | 4.74 | .13 | .42 | 3.44 |

*Note.* CRG = Composite reading growth; PRG = Percent reading growth.

# APPENDIX B

## RESEARCH QUESTION 2 TABLES

Table B1

*ANOVA Composite Reading Growth and All Grades*

| Model | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between groups | 1388.408 | 1 | 1388.408 | 11.708 | .001 |
| Within groups | 33796.805 | 285 | 118.585 | | |
| Total | 35185.213 | 286 | | | |

Table B2

*ANOVA Composite Reading Growth and Combined 7th and 8th Grade Gender*

| Model | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between groups | 654.659 | 1 | 654.659 | 5.403 | .021 |
| Within groups | 34530.553 | 285 | 121.160 | | |
| Total | 35185.213 | 286 | | | |

Table B3

*ANOVA Composite Reading Growth and 8th Grade Gender*

| Model | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between groups | 1.803 | 1 | 1.803 | .148 | .702 |
| Within groups | 1061.266 | 87 | 12.198 | | |
| Total | 1063.068 | 88 | | | |

Table B4

*ANOVA Composite Reading Growth and 7th Grade Gender*

| Model | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between groups | 578.617 | 1 | 578.617 | 4.024 | .047 |
| Within groups | 19413.514 | 135 | 143.804 | | |
| Total | 19992.131 | 136 | | | |

Table B5

*ANOVA Composite Reading Growth and Combined 7th and 8th Grade Race*

| Model | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between groups | 1123.557 | 3 | 374.519 | 3.112 | .027 |
| Within groups | 34061.656 | 283 | 120.359 | | |
| Total | 35185.213 | 286 | | | |

Table B6

*ANOVA Composite Reading Growth and 8th Grade Race*

| Model | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between groups | 959.361 | 3 | 319.787 | 3.635 | .014 |
| Within groups | 12845.312 | 146 | 87.982 | | |
| Total | 13804.673 | 149 | | | |

Table B7

*ANOVA Composite Reading Growth and 7th Grade Race*

| Model | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between groups | 664.075 | 3 | 221.358 | 1.523 | .211 |
| Within groups | 19328.056 | 133 | 145.324 | | |
| Total | 19992.131 | 136 | | | |

Table B8

*ANOVA Percent Reading Growth and All Grades*

| Model | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between groups | 383.786 | 1 | 383.786 | 12.887 | .000 |
| Within groups | 8636.116 | 290 | 29.780 | | |
| Total | 9019.901 | 291 | | | |

Table B9

*ANOVA Percent Reading Growth and Combined 7th and 8th Grade Gender*

| Model | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between groups | 149.887 | 1 | 149.887 | 4.900 | .028 |
| Within groups | 8870.015 | 290 | 30.586 | | |
| Total | 9019.901 | 291 | | | |

Table B10

*ANOVA Percent Reading Growth and 8th Grade Gender*

| Model | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between groups | 37.390 | 1 | 37.390 | 1.673 | .198 |
| Within groups | 3352.542 | 150 | 22.350 | | |
| Total | 3389.931 | 151 | | | |

Table B11

*ANOVA Percent Reading Growth and 7th Grade Gender*

| Model | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between groups | 139.640 | 1 | 139.640 | 3.774 | .054 |
| Within groups | 5106.545 | 138 | 37.004 | | |
| Total | 5246.184 | 139 | | | |

Table B12

*ANOVA Percent Reading Growth and Combined 7th and 8th Grade Race*

| Model | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between groups | 289.607 | 3 | 96.536 | 3.185 | .024 |
| Within groups | 8730.295 | 288 | 30.314 | | |
| Total | 9019.901 | 291 | | | |

Table B13

*ANOVA Percent Reading Growth and 8th Grade Race*

| Model | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between groups | 253.908 | 3 | 84.636 | 3.994 | .009 |
| Within groups | 3136.024 | 148 | 21.189 | | |
| Total | 3389.931 | 151 | | | |

Table B14

*ANOVA Percent Reading Growth and 7th Grade Race*

| Model | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between groups | 173.776 | 3 | 57.925 | 1.553 | .204 |
| Within groups | 5072.408 | 136 | 37.297 | | |
| Total | 5246.184 | 139 | | | |

# APPENDIX C

# RESEARCH QUESTION 3 TABLES

Table C1

*7th and 8th Grade Sum NWEA-MAP Spring and Winter Reading Composite Scores*

| | SuccessMaker users | non-SuccessMaker users |
|---|---|---|
| | Sum | Sum |
| NWEA-MAP spring mean composite reading score | 60755 (n = 300) | 37683 (n = 168) |
| NWEA-MAP winter mean composite reading score | 72102 (n = 346) | 41331 (n = 185) |

Table C2

*7th and 8th Grade Mean NWEA-MAP Spring and Winter Reading Composite Scores*

| | SuccessMaker users | non-SuccessMaker users |
|---|---|---|
| | M | M |
| NWEA-MAP spring mean composite reading score | 202.52 (n = 300) | 224.30 (n = 168) |
| NWEA-MAP winter mean composite reading score | 208.39 (n = 346) | 223.41 (n = 185) |

**Calculated Gap Statistic**

1- [(223.41 – 208.39)] / [(224.30 – 202.52)] = .310

# APPENDIX D

## REEARCH QUESTION 4 TABLES

Table D1

*7th Grade Language Arts MyPerspectives Pre and Post Assessment Grades*

| | | SuccessMaker users | | non-SuccessMaker users | |
|---|---|---|---|---|---|
| | | Pre | Post | Pre | Post |
| MyPerspectives assessment grade | A | 3 | 4 | 0 | 2 |
| | B | 4 | 16 | 3 | 7 |
| | C | 4 | 13 | 2 | 8 |
| | D | 18 | 18 | 7 | 13 |
| | F | 119 | 89 | 43 | 24 |
| | Total | 148 | 140 | 55 | 54 |

Table D2

*8th Grade Language Arts MyPerspectives Pre and Post Assessment Grades*

| | | SuccessMaker users | | non-SuccessMaker users | |
|---|---|---|---|---|---|
| | | Pre | Post | Pre | Post |
| MyPerspectives assessment grade | A | 0 | 6 | 0 | 2 |
| | B | 3 | 21 | 1 | 9 |
| | C | 13 | 15 | 7 | 12 |
| | D | 31 | 35 | 13 | 15 |
| | F | 107 | 73 | 81 | 55 |
| | Total | 154 | 150 | 102 | 93 |

Table D3

*All Grades Language Arts MyPerspectives Pre and Post Assessment Grades*

| | | 7th Grade | | | | 8th Grade | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | preS | prenS | postS | postnS | preS | prenS | postS | postnS |
| MyPerspectives assessment grade | A | 3 | 0 | 4 | 2 | 0 | 0 | 6 | 2 |
| | B | 4 | 3 | 16 | 7 | 3 | 1 | 21 | 9 |
| | C | 4 | 2 | 13 | 8 | 13 | 7 | 15 | 12 |
| | D | 18 | 7 | 18 | 13 | 31 | 13 | 35 | 15 |
| | F | 119 | 43 | 89 | 24 | 107 | 81 | 73 | 55 |
| | Total | 148 | 55 | 140 | 54 | 154 | 102 | 150 | 93 |

*Note.* preS = pretest SuccessMaker users; prenS = pretest non-SuccessMaker users; postS = posttest SuccessMaker users; postnS = posttest non-SuccessMaker users

Table D4

*7th Grade Language Arts Quarter Pre and Post Assessment Grade Changes for SuccessMaker Users*

| | | Post assessment grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| Pre assessment grade | A | 4 | 0 | 0 | 0 | 0 |
| | B | 0 | 16 | 0 | 0 | 0 |
| | C | 0 | 0 | 13 | 0 | 0 |
| | D | 0 | 0 | 0 | 18 | 0 |
| | F | 0 | 0 | 0 | 0 | 89 |

Table D5

*7th Grade Language Arts Quarter Pre and Post Assessment Grade Changes for non-SuccessMaker Users*

| | | Post assessment grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| Pre assessment grade | A | 2 | 0 | 0 | 0 | 0 |
| | B | 0 | 7 | 0 | 0 | 0 |
| | C | 0 | 0 | 8 | 0 | 0 |
| | D | 0 | 0 | 0 | 13 | 0 |
| | F | 0 | 0 | 0 | 0 | 24 |

Table D6

*8th Grade Language Arts Quarter Pre and Post Assessment Grade Changes for SuccessMaker Users*

| | | Post assessment grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| Pre assessment grade | A | 6 | 0 | 0 | 0 | 0 |
| | B | 0 | 21 | 0 | 0 | 0 |
| | C | 0 | 0 | 15 | 0 | 0 |
| | D | 0 | 0 | 0 | 35 | 0 |
| | F | 0 | 0 | 0 | 0 | 73 |

Table D7

*8th Grade Language Arts Quarter Pre and Post Assessment Grade Changes for non-SuccessMaker Users*

| | | Post assessment grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| Pre assessment grade | A | 2 | 0 | 0 | 0 | 0 |
| | B | 0 | 9 | 0 | 0 | 0 |
| | C | 0 | 0 | 12 | 0 | 0 |
| | D | 0 | 0 | 0 | 15 | 0 |
| | F | 0 | 0 | 0 | 0 | 55 |

Table D7

*Langauge Arts 1st Quarter Course Grades*

| | | SuccessMaker users | | non-SuccessMaker users | |
|---|---|---|---|---|---|
| | | 7 | 8 | 7 | 8 |
| 1st quarter course grade | A | 16 | 5 | 27 | 5 |
| | B | 56 | 29 | 29 | 29 |
| | C | 42 | 62 | 9 | 62 |
| | D | 29 | 47 | 7 | 47 |
| | F | 24 | 44 | 1 | 44 |
| | Total | 167 | 187 | 73 | 187 |

Table D8

*Language Arts 2nd Quarter Course Grades*

| | | SuccessMaker users | | non-SuccessMaker users | |
|---|---|---|---|---|---|
| | | 7 | 8 | 7 | 8 |
| | A | 29 | 4 | 29 | 11 |
| 2nd quarter | B | 56 | 42 | 28 | 38 |
| course grade | C | 61 | 56 | 10 | 37 |
| | D | 18 | 49 | 4 | 18 |
| | F | 6 | 35 | 2 | 12 |
| | Total | 170 | 186 | 74 | 116 |

Table D9

*Language Arts 1st Semester Course Grades*

| | | SuccessMaker users | | non-SuccessMaker users | |
|---|---|---|---|---|---|
| | | 7 | 8 | 7 | 8 |
| | A | 16 | 4 | 29 | 12 |
| 1st semester | B | 54 | 32 | 30 | 42 |
| course grade | C | 57 | 61 | 7 | 33 |
| | D | 34 | 48 | 6 | 16 |
| | F | 9 | 41 | 1 | 13 |
| | Total | 170 | 186 | 73 | 116 |

Table D10

*Language Arts Quarter Course Grade Changes for All Grades of SuccessMaker Users*

| | | 1st quarter course grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| | A | 12 | 11 | 7 | 0 | 3 |
| | B | 5 | 46 | 35 | 9 | 3 |
| 2nd quarter course grade | C | 4 | 24 | 34 | 35 | 17 |
| | D | 0 | 3 | 26 | 21 | 16 |
| | F | 0 | 1 | 2 | 11 | 27 |

Table D11

*Language Arts Quarter Course Grade Changes for All Grades of non-SuccessMaker Users*

| | | 1st quarter course grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| | A | 27 | 10 | 1 | 1 | 1 |
| | B | 11 | 46 | 8 | 0 | 1 |
| 2nd quarter course grade | C | 2 | 21 | 15 | 9 | 0 |
| | D | 0 | 3 | 7 | 8 | 4 |
| | F | 0 | 0 | 1 | 6 | 6 |

Table D12

*Language Arts 1st Quarter to 1st Semester Course Grade Changes for All Grades of SuccessMaker Users*

| | | 1st semester course grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| 1st quarter course grade | A | 12 | 11 | 7 | 0 | 3 |
| | B | 5 | 46 | 35 | 9 | 3 |
| | C | 4 | 24 | 34 | 35 | 17 |
| | D | 0 | 3 | 26 | 21 | 16 |
| | F | 0 | 1 | 2 | 11 | 27 |

Table D13

*Language Arts 1st Quarter to 1st Semester Course Grade Changes for All Grades of non-SuccessMaker Users*

| | | 1st semester course grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| 1st quarter course grade | A | 27 | 10 | 1 | 1 | 1 |
| | B | 11 | 46 | 8 | 0 | 1 |
| | C | 2 | 21 | 15 | 9 | 0 |
| | D | 0 | 3 | 7 | 8 | 4 |
| | F | 0 | 0 | 1 | 6 | 6 |

Table D14

*Language Arts 2nd Quarter to 1st Semester Course Grade Changes for All Grades of SuccessMaker Users*

| | | 1st semester course grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| 2nd quarter course grade | A | 12 | 11 | 7 | 0 | 3 |
| | B | 5 | 46 | 35 | 9 | 3 |
| | C | 4 | 24 | 34 | 35 | 17 |
| | D | 0 | 3 | 26 | 21 | 16 |
| | F | 0 | 1 | 2 | 11 | 27 |

Table D15

*Language Arts 2nd Quarter to 1st Semester Course Grade Changes for All Grades of non-SuccessMaker Users*

| | | 1st semester course grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| 2nd quarter course grade | A | 27 | 10 | 1 | 1 | 1 |
| | B | 11 | 46 | 8 | 0 | 1 |
| | C | 2 | 21 | 15 | 9 | 0 |
| | D | 0 | 3 | 7 | 8 | 4 |
| | F | 0 | 0 | 1 | 6 | 6 |

Table D16

*Language Arts Quarter Course Grade Changes by Percent for All Grades of SuccessMaker Users*

| | | 1st quarter course grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| 2nd quarter course grade | A | 36.4% | 33.3% | 21.2% | 0% | 9.1% |
| | B | 5.1% | 46.9% | 35.7% | 9.2% | 3.1% |
| | C | 3.5% | 21.1% | 29.8% | 30.7% | 14.9% |
| | D | 0% | 4.5% | 39.4% | 31.8% | 24.2% |
| | F | 0% | 2.4% | 4.9% | 26.8% | 65.9% |

Table D17

*Language Arts Quarter Course Grade Changes by Percent for All Grades of non-SuccessMaker Users*

| | | 1st quarter course grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| 2nd quarter course grade | A | 67.5% | 25.0% | 2.5% | 2.5% | 2.5% |
| | B | 16.7% | 69.7% | 12.1% | 0% | 1.5% |
| | C | 4.3% | 44.7% | 31.9% | 19.1% | 0% |
| | D | 0% | 13.6% | 31.8% | 36.4% | 18.2% |
| | F | 0% | 0% | 7.7% | 46.2% | 46.2% |

Table D18

*Language Arts 1st Quarter to 1st Semester Course Grade Changes by Percent for All Grades of SuccessMaker Users*

| | | 1st semester course grade | | | | |
|---|---|---|---|---|---|---|
| | | F | D | C | B | A |
| 1st quarter course grade | F | 65.9% | 26.8% | 4.9% | 2.4% | 0% |
| | D | 24.2% | 31.8% | 39.4% | 4.5% | 0% |
| | C | 14.9% | 30.7% | 29.8% | 21.1% | 3.5% |
| | B | 3.1% | 9.2% | 35.7% | 46.9% | 5.1% |
| | A | 9.1% | 0% | 21.2% | 33.3% | 36.4% |

Table D19

*Language Arts 1st Quarter to 1st Semester Course Grade Changes by Percent for All Grades of non-SuccessMaker Users*

| | | 1st semester course grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| 1st quarter course grade | A | 85.0% | 15.0% | 0% | 0% | 0% |
| | B | 5.0% | 75.0% | 20.0% | 0% | 0% |
| | C | 3.1% | 15.6% | 62.5% | 15.6% | 3.1% |
| | D | 0% | 4.2% | 12.5% | 70.8% | 12.5% |
| | F | 16.7% | 0% | 8.3% | 0% | 75.0% |

Table D20

*Language Arts 2nd Quarter to 1st Semester Course Grade Changes by Percent for All Grades of SuccessMaker Users*

| | | 1st semester course grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| 2nd quarter course grade | A | 54.5% | 36.4% | 6.1% | 3.0% | 0% |
| | B | 1.0% | 61.2% | 35.7% | 1.0% | 1.0% |
| | C | 0% | 12.0% | 57.3% | 29.1% | 1.7% |
| | D | 0% | 0% | 19.4% | 61.2% | 19.4% |
| | F | 2.4% | 0% | 2.4% | 12.2% | 82.9% |

Table D21

*Language Arts 2nd Quarter to 1st Semester Course Grade Changes by Percent for All Grades of non-SuccessMaker Users*

| | | 1st semester course grade | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | F |
| 2nd quarter course grade | A | 80.0% | 20.0% | 0% | 0% | 0% |
| | B | 0% | 81.8% | 6.1% | 0% | 0% |
| | C | 0% | 21.3% | 66.0% | 12.8% | 0% |
| | D | 4.5% | 0% | 22.7% | 59.1% | 13.6% |
| | F | 0% | 0% | 0% | 21.4% | 78.6% |

Table D22

*Mean of Quarter, Semester, and Pre-Post Assessment Grade Change for All Grades*

| | SuccessMaker users | non-SuccessMaker users |
|---|---|---|
| Quarter Mean Change | 1.90 | 2.54 |
| Pre-Post Assessment Mean Change | .61 | .58 |
| 1st Quarter to 1st Semester Mean Change | 1.80 | 2.57 |
| 2nd Quarter to 1st Semester Mean Change | 1.94 | 2.53 |

Table D23

*Mean of Quarter, Semester and Pre-Post Assessment Grade Change for Individual Grades*

| | Non-SuccessMaker users | | SuccessMaker users | |
|---|---|---|---|---|
| | 7 | 8 | 7 | 8 |
| QMC | 2.28 | 1.55 | 3.04 | 2.23 |
| QSMC1 | 3.05 | 2.26 | 2.13 | 1.49 |
| QSMC2 | 3.08 | 2.18 | 2.35 | 1.57 |
| PPMC | .52 | .69 | .72 | .51 |

*Note.* QMC =1st quarter to 2nd quarter mean change; QSMC1 = 1st quarter to 1st semester mean change, QSMC2 = 2nd quarter to 1st semester mean change; PPMC = pre-post mean change.

Table D24

*Mean, Median, and Standard Deviation of Language Arts Grades for Individual Grades of SuccessMaker Users*

| | 7 | | | 8 | | |
|---|---|---|---|---|---|---|
| | M | MD | SD | M | MD | SD |
| 1st quarter course grade | 2.07 | 2.00 | 1.21 | 1.49 | 2.00 | 1.09 |
| 2nd quarter course grade | 2.49 | 2.50 | 1.01 | 1.63 | 2.00 | 1.09 |
| 1st semester course grade | 2.20 | 2.00 | 1.04 | 1.52 | 2.00 | 1.08 |
| MyPerspectives pre assessment | .34 | 0.0 | .83 | .43 | 0.0 | .73 |
| MyPerspectives post assessment | .77 | 0.0 | 1.18 | 1.01 | 1.0 | 1.23 |

Table D25

*Mean, Median, and Standard Deviation of Language Arts Grades and MyPerspectives Assessments for Individual Grades of non-SuccessMaker Users*

| | 7 | | | 8 | | |
|---|---|---|---|---|---|---|
| | M | MD | SD | M | MD | SD |
| 1st quarter course grade | 3.01 | 3.00 | 1.01 | 2.33 | 3.00 | 1.15 |
| 2nd quarter course grade | 3.07 | 3.00 | 1.01 | 2.16 | 2.00 | 1.12 |
| 1st semester course grade | 3.10 | 3.00 | .97 | 2.21 | 2.00 | 1.15 |
| MyPerspectives pre assessment | .36 | 0.0 | .80 | .29 | 0.0 | .64 |
| MyPerspectives post assessment | 1.07 | 1.00 | 1.21 | .80 | 0.0 | 1.13 |

# APPENDIX E

# RESEARCH QUESTION 5 TABLES

Table E1

*Correlation Composite Reading Growth and Time Spent on SuccessMaker by All Grades*

| All Grades | Total |
|---|---|
| Pearson Correlation | .144 |
| Sig. (2-tailed) | .015 |
| N | 284 |

Table E2

*Correlation Composite Reading Growth and Time Spent on SuccessMaker by 7th Grade*

| Grade | 7 |
|---|---|
| Pearson Correlation | .348 |
| Sig. (2-tailed) | .000 |
| N | 136 |

Table E3

*Correlation Composite Reading Growth and Time Spent on SuccessMaker by 8th Grade*

| Grade | 8 |
|---|---|
| Pearson Correlation | -.073 |
| Sig. (2-tailed) | .380 |
| N | 148 |

Table E4

*Correlation Percent Reading Growth and Time Spent on SuccessMaker by All Grades*

| Grade | All |
|---|---|
| Pearson Correlation | .139 |
| Sig. (2-tailed) | .018 |
| N | 289 |

Table E5

*Correlation Percent Reading Growth and Time Spent on SuccessMaker by 7th Grade*

| Grade | 7 |
|---|---|
| Pearson Correlation | .334 |
| Sig. (2-tailed) | .000 |
| N | 139 |

Table E6

*Correlation Percent Reading Growth and Time Spent on SuccessMaker by 8th Grade*

| Grade | 8 |
|---|---|
| Pearson Correlation | -.072 |
| Sig. (2-tailed) | .384 |
| N | 150 |

# APPENDIX F

# RESEARCH QUESTION 6 TABLES

Table F1

*Correlation Composite Reading Growth and Incremental Growth in SuccessMaker by All Grades*

| Grade | All |
|---|---|
| Pearson Correlation | .157 |
| Sig. (2-tailed) | .008 |
| N | 281 |

Table F2

*Correlation Composite Reading Growth and Incremental Growth in SuccessMaker by 7th Grade*

| Grade | 7 |
|---|---|
| Pearson Correlation | .373 |
| Sig. (2-tailed) | .000 |
| N | 135 |

Table F3

*Correlation Composite Reading Growth and Incremental Growth in SuccessMaker by 8th Grade*

| Grade | 8 |
|---|---|
| Pearson Correlation | -.051 |
| Sig. (2-tailed) | .538 |
| N | 146 |

Table F4

*Correlation Percent Reading Growth and Incremental Growth in SuccessMaker by All Grades*

| Grade | All |
|---|---|
| Pearson Correlation | .151 |
| Sig. (2-tailed) | .011 |
| N | 286 |

Table F5

*Correlation Percent Reading Growth and Incremental Growth in SuccessMaker by 7th Grade*

| Grade | 7 |
|---|---|
| Pearson Correlation | .345 |
| Sig. (2-tailed) | .000 |
| N | 138 |

Table F6

*Correlation Percent Reading Growth and Incremental Growth in SuccessMaker by 8th Grade*

| Grade | 8 |
|---|---|
| Pearson Correlation | -.033 |
| Sig. (2-tailed) | .691 |
| N | 148 |

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