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ABSTRACT

Being a proficient reader is an essential part of today’s society. In order to address the literacy crisis in the United States, we must find effective ways to meet the instructional needs of struggling readers. Research suggests that reading proficiency can be increased if we can identify at-risk children early and provide quality intervention before failure occurs. The purpose of this action research study was to examine how implementing mCLASS Reading Burst Interventions and progress monitoring affects the reading achievement of students who are at risk for reading failure. Specifically, this study measured how mCLASS Reading Burst interventions and progress monitoring affected students reading fluency and comprehension levels. This was a six-week study that took place in a rural school located in the central piedmont region of North Carolina. This research included 13 participants: 12 students and 1 teacher researcher. Student participants were divided into 2 equal groups: a treatment and control group. The treatment group received 30 additional minutes a day of reading Burst interventions and progress monitoring, while the control group only received progress monitoring. Results from this study indicated that Reading Burst interventions have a positive effect on students reading fluency and comprehension. However, further research is needed in order to make specific claims or generalizations about the effects of the interventions on student achievement.
ACKNOWLEDGEMENTS

I would like to thank my committee members: Dr. Michelle Parker, Dr. Scott Imig, and Adeena East for their guidance and support throughout this process. I have learned so much from each of you.

I would like to thank Dr. Parker for going above and beyond what was required, so that I could begin my thesis early. You made my goal of finishing graduate school in a year and a half possible. I will always be grateful. I could not have done this without your support and feedback. I really appreciate the kindness, patience, and understanding you’ve shown throughout this process.

Dr. Imig, you have always been so helpful and encouraging. Your positive words and encouragement helped me get through some difficult times during this journey. Thank you for your support and for believing in me.

I would like to thank my colleague, Adeena East for agreeing to serve as a committee member. Adeena, you inspired me to pursue this degree. Your knowledge and leadership have changed the lives of so many teachers and students. Thank you for the years of guidance and support. I know I can always count on you to lead me in the right direction.
DEDICATION

I would like to dedicate this thesis to my wonderful husband, Michael. Thank you for the patience, love, and support you have shown me throughout this journey. I love you.
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CHAPTER 1: INTRODUCTION

As educators we hear the words Struggling Readers all of the time, but do we really understand how reading difficulties can effect the future of our students? Being a proficient reader is an essential part of today’s society. Literacy skills have an effect on every aspect of adult life. Many adults who have low literacy levels do not see their struggles as a problem until they encounter a crisis such as losing a job, being unable to help their children with school work, or have a health care emergency (Sum, 1999; White, 2003).

White (2003) suggests that 14% of adult Americans demonstrated a below basic literacy level, and 29% exhibited a basic reading level. These statistics have had a significant effect on the United States. People with a low level of literacy are more likely to drop out of school, live in poverty, experience incarceration, receive government assistance, and be unemployed (Sum, 1999; White, 2003; Harlow, 2003).

In order to address the literacy crisis in the United States, we must find effective ways to meet the instructional needs of struggling readers. Research has found that all but a very small percentage of children can learn how to read (Wilson, 2012). With explicit, balanced instruction, extended time, and the right interventions every student can experience reading success.

Statement of the Problem

Those who are not proficient readers face many obstacles. We live in a country that offers few career opportunities to the illiterate, therefore teaching children to read is the most important challenge educators are faced with today (Sum, 1999).

Mathes (2005) explained that a student who is unable to learn to read proficiently in the first grade has a 90% chance of remaining a poor reader by fourth grade. This limits opportunities for success in school and results in paralyzing insecurities. Those who
struggle with reading early on, later struggle with life as almost unemployable adults with low self-worth. Reading failure is widespread among children in poverty. Many low-income school districts report up to 70% of fourth grade students cannot read at a basic level (p. 1).

Research suggests we can identify at-risk children early, provide high quality intervention before failure occurs, and in most cases normalize reading ability (Denton, et al., 2010). The current study examined how implementing mCLASS Reading Burst Interventions and progress monitoring affects the achievement of students who are at risk for reading failure.

Early Identification and Instruction

mCLASS®:Reading 3D™ is a K-5 literacy based program that uses mobile technology as a way of collecting and analyzing student data (Wireless Generation, 2012). The data recorded on the iPad is accessible to teachers, administrators, and support personnel immediately after the mobile device is synced with the mCLASS home website. This program includes three benchmark assessments that guide instruction and identify individual students who require monitoring and additional instructional interventions (Wireless Generation, 2012).

The mCLASS® Home website contains a Small Group Advisor option. Small-Group Advisor sorts students into intervention groups based on assessment results. If students Beginning of the Year (BOY) benchmark scores were below the proficiency level, they may receive interventions for phonemic awareness, phonics, and reading comprehension.

Wilson (2012) explains mCLASS® identifies the need for progress monitoring by taking the following steps: assess students; consult, analyze and discuss data; create small groups and tailor instruction; and then monitor their progress. This helps with data driven decision-making and determining small group activities designed to meet the needs of individual students (Fuchs
& Fuchs, 2002; Honey, 2007; Kerner & Stevenson, 2008).

Definition of Terms

For the purpose of this study, the researcher applied the following terms and definitions:

**mCLASS®: Reading 3D** – An observational reading assessment software for grades K-5 (Sharp, 2009).

**Dynamic Indicators of Basic Literacy Skills (DIBELS)** – A series of short tests that assess early childhood literacy (Dynamic Measurement Group, n.d.).

**Phoneme Segmentation Fluency (PSF)** – A DIBELS assessment that measures a student’s ability to segment three and four phoneme words into their individual sounds fluently (Dynamic Measurement Group, n.d).

**Nonsense Word Fluency (NWF)** – A DIBELS assessment that measures a student’s ability to blend letters into made up words (Dynamic Measurement Group, n.d.).

**NWF (CLS)** – Nonsense Word Fluency Correct Letter Sounds – The number of correct letter sounds students can indentify correctly in one minute (Dynamic Measurement Group, n.d.).

**NWF (WWR)** - Nonsense Word Fluency Whole Words Read – The number of whole nonsense words a student can read correctly in one minute (Dynamic Measurement Group, n.d.).

**Text Reading Comprehension (TRC)** - an individually administered assessment using leveled readers from a book set to determine a student’s instructional reading and comprehension level; the reading level at which he or she is not only performing well, but being challenged (Wireless Generation, n.d.).

**Burst® Reading** – An intervention program that provides intense bursts of targeted instruction focusing on exact individual student needs (Wireless Generation, 2009).
Fluency - How quickly, accurately, automatically and expressively someone reads (Wireless Generation, 2009).

Comprehension – The level of understanding of a text.

Reading Intervention - A program supplementary to an existing literacy curriculum, that is provided to students for the primary purpose of increasing reading levels (Mathes, 2005).

Assessment – An evaluation that measures student achievement.

Progress Monitoring – Progress monitoring is a scientifically based practice that is used to assess students’ academic performance and evaluate the effectiveness of instruction (Safer & Fleischman, 2005).

Data – Students reading achievement levels that can be gathered from benchmarks and/or progress monitoring sessions

Beginning Of Year Benchmark (BOY) – An mCLASS benchmark assessment given at the beginning of the year (Wireless Generation, 2012).
CHAPTER 2: REVIEW OF LITERATURE

In recent years the public has gained an awareness of the role early reading instruction plays in later academic success. Students who are poor readers at the end of first grade rarely catch up to their grade level peers (Francis et al. 1996; Lyon et al., 2001; National Reading Panel, 2000).

Dubal, et al. (2012) suggests that tailoring instruction to individual student abilities should maximize each student’s literacy growth. Often students struggle with reading due to inadequate instruction rather than an inherent disability (Kerner & Stevenson, 2008). Denton et al. (2010) suggests reading difficulties such as insufficient phonological awareness can be prevented when young children receive effective differentiated interventions.

Differentiated Reading Interventions

One-size-fits-all instruction will not do when working with struggling readers (Lipson, 2006). To address this issue, many schools have became more systematic in how they identify students' needs and tailor reading interventions to fit those needs (Sharp, 2009). Some of the most comprehensive of these approaches have evolved into Response to Intervention (RTI) systems, aimed simultaneously at providing effective intervention in regular classrooms and reducing inappropriate referrals for special education services (Gersten et al., 2009). Without greater, more comprehensive resources for teachers in the areas of lesson intensity and matching instruction to student need, we risk failing to meet the needs of our lowest-skilled students (Sharp, 2012).

When individualized, explicit, and systematic instructional practices are used in the classroom all but a small percentage of students can learn to read on grade level. Early reading scores can identify which students are suitable for early intervention programs. Identifying and
addressing academic challenges early saves students years of struggle and isolation (Musen, 2010).

A growing body of research indicates that early intervention matched to student needs can unlock higher learning rates for most students (Kerner & Stevenson, 2008; NCDPI, 2012; Safer & Fleischman, 2005; Sharp, 2009; Wireless Generation, 2009). Because the needs of some students are so vast, our only chance to provide sufficient amounts of instruction and learning within the limited school day is to ensure that the instructional intensity of their lessons is as high as possible, based on the latest scientific evidence about the design and content of effective programs (Sharp, 2009).

Instructional interventions for children who have difficulties in reading must be more explicit, comprehensive, intensive, and supportive than the instruction provided to most students (Foreman & Torgeson, 2001). Kerner and Stevenson (2008) suggests that interventions should include targeted lessons in addition to daily classroom instruction, lasting anywhere from 8 to 15 weeks. These interventions can also increase in intensity, depending on the level of need.

However, if teachers deliver lessons with low instructional intensity, the amount of learning students gain still may not be sufficient for them to successfully read at grade level, even if they are taught these lessons in small groups or in more frequent doses (Sharp, 2009). Data-based, differentiated instruction is both challenging and time-consuming to implement in the classroom (Moats & Foorman, 2003; Cunningham, Perry, Stanovich, & Stanovich, 2004). Teachers need to be able to easily access lessons that are designed with a high level of instructional intensity and targeted to meet the specific needs of struggling readers (Sharp, 2009).

Other Early Reading Programs and Interventions

Other reading programs have been found to have positive affects on the reading
achievement of at-risk students. Some of the programs include: SpellRead, Daisy Quest, Read Naturally, Reading Recovery, and Success For All (SFA). All of these programs may have had a positive effect on phonics, fluency, and/or comprehension (What Works Clearinghouse, n.d).

aimsweb is a universal screening, progress monitoring, and data management system that supports Response to Intervention (aimsweb, n.d). Like mCLASS, aimsweb includes assessment, progress monitoring, and electronic data collection and analysis. However, aimsweb does not include embedded interventions like mCLASS’s Burst Reading.

Burst Reading

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) are a set of measures for assessing early literacy skills from kindergarten through sixth grade (Sharp, 2009). They are one-minute fluency measures used to regularly monitor the development of early reading skills.

Manzo (2005) explained that DIBELS is a good assessment tool because it gives teachers detailed information on what early reading skills students have mastered and what skills require additional instructional support. However, DIBELS does not give teachers clear answers for planning differentiated instruction.

Burst Reading® provides intense targeted instruction focusing on the skills, the pace, and the level that groups of students need (Wireless Generation, 2009). Burst Reading interventions include differentiated lessons that focus on: key strategies, addressing concerns about intensity, using explicit thinking, scaffolding, and gradually releasing responsibility to students (Dubal, et al., 2012). Burst Reading consists of a comprehensive assessment system complete with efficient, reliable, and valid measures for phonemic awareness, decoding (nonsense words and real words), fluency, comprehension, and vocabulary (Sharp, 2009).
Progress Monitoring

The National Center on Response to Intervention (2008) suggests the purpose of progress monitoring is to determine whether or not students are responding successfully to instruction/intervention. A significant body of research has shown progress monitoring to be a reliable and valid predictor of later performance on a variety of measures, thus useful for a wide range of instructional decisions (Deno, 2003; Fuchs, Deno, & Mirkin 1984; Good & Jefferson, 1998).

In today’s schools, success is defined as ensuring achievement for every student (Safer & Fleischman, 2005). Fuchs and Fuchs (2002) suggest teachers need tools to help them identify students who are at risk academically, need additional, or different forms of instruction.

Kerner and Stevenson (2008) describe progress monitoring as when teachers assess students' academic performance on a regular basis (weekly or monthly) for two purposes: to determine whether children are profiting appropriately from the typical instructional program and to build more effective programs for the children who benefit inadequately from typical instruction. Progress monitoring allows teachers to know if the student is learning at a pace that will allow him or her to meet annual learning goals (Safer & Fleischman, 2005).

Progress monitoring is believed to have a positive effect on the reading achievement of at risk students. Honey (2007) suggests that this is due to the teacher’s ability to monitor what students know and how they understand it, the specific types of feedback that teachers provide to students based on their performance, and the specific actions that teachers take when responding to student results.

For students performing significantly below grade level, the North Carolina Department of Public Instruction requires that progress monitoring occur every ten days, after nine days of
instruction (Wilson, 2012). mCLASS® progress-monitoring is administered after every two-week lesson sequence (10 days), so the next lesson sequence can be tailored to ongoing individual student needs. mCLASS identifies the need for progress monitoring by taking the following steps: assess students; consult, analyze and discuss data; create small groups and tailor instruction; and then monitor their progress (Wireless Generation, 2012). mCLASS enables teachers in grades K-3 to utilize universal screening, progress monitor, and make data based decisions about individual student needs.

mCLASS®: Reading 3D and DIBELS

The mCLASS®: Reading 3D foundational skills are partially based on DIBELS (Dynamic Indicators of Basic Early Literacy Skills) assessments (Wilson, 2012). These tests are timed, 1 minute measures that assess early literacy skills. They are administered regularly to formatively assess the growth of early literacy skills.

The seven DIBELS “quick check” assessments predict where students are performing and provide instructional guidance for teachers. The quick check assessments include Initial Sound Fluency (ISF), Phoneme Segmentation Fluency (PSF), Letter Naming Fluency (LNF), Nonsense Word Fluency (NWF), Word Use Fluency (WUF), Oral Reading Fluency (ORF), and Retell Fluency (RTF). With the exception of LNF, each of the quick check assessments aligns with the elements in beginning reading (Wilson, 2012 p. 30).

Each of the seven Quick Check assessments are essential in learning how to read and are strong predictors of students who will experience reading success and failure (Sharp, 2009).

DIBELS Phoneme Segmentation Fluency (PSF) is a test of Phonological Awareness (Good, Gruba, & Kaminski, 2001). The PSF measure assesses a student’s ability to fluently
segment three- and four-phoneme words into their individual phonemes. (Kaminski & Good, 1996). DIBELS Nonsense Word Fluency (NWF) is a test of the Alphabetic Principle, including knowledge of letter-sound correspondences and the ability to blend letters into words in which letters represent their most common sounds (Kaminski & Good, 1996). Neddenriep, Fritz, and Carrier (2011) state that if we understand the relationship between reading fluency and comprehension, we would expect that, as fluency increases, so too would reading comprehension.
CHAPTER 3: METHODOLOGY

The purpose of this action research study was to examine how Burst Reading interventions affect the reading achievement of 1st grade students at risk of reading failure. The methodology will discuss the research questions, action research, context, participants, data collection/measures, and interventions.

Research Questions

This action research study investigated the following two questions:

1. How does implementing Burst Reading interventions affect student fluency levels?
2. How does implementing Burst Reading interventions affect student achievement in reading comprehension?

Action Research

The purpose of action research is for practitioners to investigate and improve their practices. Mills (2003) suggests that action research is systematic inquiry conducted by teacher researchers to gather information about how they teach and how their students learn. The issues addressed in action research are usually of personal interest to the researchers, often focusing on problems that are interfering with their teaching effectiveness or with their student’s achievement (Slavin, 2007).

Action research projects should include the following seven steps: choose a manageable problem or issue to address, determine the design of the study and what kind of data to collect, collect the data, implement the new intervention for a set period of time, collect more data during the intervention, analyze the data, and determine an action plan based on the findings (Slavin, 2007). It is believed that action research can lead to trying new practices that might improve teaching effectiveness (Hendricks, 2013).
Context

During the 2012-2013 school year, North Carolina adopted the program mCLASS® Reading 3D as the state wide formative, diagnostic assessment system to be used by all K-3 classroom teachers (NCDPI, 2012). This program enables teachers in grades K-3 to use universal screening, progress monitor, and make data based decisions about individual student’s instructional needs (Dubal, et al., 2012). mCLASS also provides Burst Reading intervention plans tailored to meet the needs of individual students (Wireless Generation, 2009).

Setting

This action research study took place at Lakeside Elementary School (LES). LES is part of the Stanly County Schools district, located in central piedmont region of North Carolina. LES is a rural, K-5 elementary school. It serves a diverse population of approximately 600 students. The student population is 53% male and 47% female. LES is a Title I School, with a free and reduced lunch rate of approximately 87%. The student population consists of 44.6% Caucasian, 28.6% African American, 14.8% Hispanic, 5.2% Asian, and 6.8% Multi-racial. LES employees 40 teachers: 100% are highly qualified, 28% hold advanced degrees, and 17% are national board certified. Average class size is 20 students.

Participants

The study took place in the researcher’s first grade classroom. Since the participants were minors, parents were asked to sign a permission to participate in a research study. An assent form to participate in a research study was signed by each of the 21 students. Classroom demographics included: 13 girls, 8 boys, 12 non-minority, and 9 minority students.

The researcher analyzed student benchmark data to identify 12 first grade students who were at risk of reading failure. The students were selected because they scored below or well
below proficiency on the mCLASS BOY benchmark. Dividing the 12 students into 2 equal groups with similar demographic (gender, race, socio-economic status) and academic characteristics (mCLASS benchmark scores) formed Treatment and Control groups.

After the participants were selected, they were assigned an identification number. The researcher referred to students by their unique identifier rather than their names during the data collection and recording stages of the study. Using a number to identify students helped to increase participant confidentiality.

Data Collection and Measures

The researcher administered the DIBELS and TRC Beginning of the Year Benchmark in order to determine which students in her 1st grade class were performing below proficiency in reading. After the initial benchmark assessment, students who were identified as being at-risk for reading failure were progressed monitored every ten days. The progress monitoring sessions took place in her first grade classroom during the daily 90-minute literacy block. Two DIBELS measures: Nonsense Word Fluency (NWF) and Phoneme Segmentation Fluency (PSF) were used to measure students phonemic awareness, phonics, and blending abilities. NWF and PSF are short one-minute assessments.

NWF measures basic letter-sound knowledge and the ability to blend sounds together to make a whole word (Appendix B). PSF evaluates a student’s ability to segment three and four letter phoneme words into their individual sounds fluently (Appendix A). Each measure has been thoroughly researched and determined to be a reliable and valid indicator of early literacy development and predictive of later literacy development to aid in the early identification of students who are not progressing as expected (Dynamic Measuring Group, n.d.)

Participants were also assessed using mCLASS®: Reading 3D™ Text Reading
Comprehension (TRC) assessments, which measured their comprehension and fluency levels. TRC assessments required students to read and thoroughly analyze a text. The researcher also administered the TRC assessments in her first grade classroom during the daily 90-minute literacy block. The assessment times varied according to student fluency, text difficulty, and length. During TRC assessments, a running record was completed with each student. A running record is a method of testing a child’s reading level by examining their accuracy, fluency, and types of errors made. The researcher recorded observations regarding fluency, comprehension, and type of error using a mobile device (an iPad).

Student results were automatically calculated and scored after administering the TRC and DIBELS Beginning of the Year benchmark assessment. DIBELS and Reading 3D specify Beginning of the Year (BOY) benchmark goals for 1st grade (See Table 1). In this study, students BOY DIBELS benchmark scores included the following ranges: PSF 5-35 phonemes per minute, NWF CLS 0-33 correct letter sounds per minute, and NWF WWR 0-10 whole words read per minute. TRC beginning of the year benchmark levels ranged from RB – D.

Table 1

<table>
<thead>
<tr>
<th>PSF</th>
<th>NWF – CLS</th>
<th>NWF – WWR</th>
<th>TRC Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>27</td>
<td>1</td>
<td>D</td>
</tr>
</tbody>
</table>

Analysis of the data helped determine small group interventions designed to meet students’ individual needs. The mCLASS homepage contains a Small Group Advisor option. Small-Group Advisor (part of the mCLASS software) sorts students into intervention groups based on assessment results. Students receive teacher-assisted interventions for reading
comprehension or decoding skills.

After students received 9 days of intensive interventions, they were progressed monitored to measure how Reading Burst interventions affected student achievement. Wilson (2012) explains mCLASS identifies the need for progress monitoring by taking the following steps: assess students; consult, analyze and discuss data; create small groups and tailor instruction; and then monitor their progress. These steps helped the researcher design instruction that met the needs of individual students.

The researcher used mCLASS data displays to identify students who were at-risk of reading failure and required additional instructional support. Assessment data was displayed using green, yellow, and red dots. Green dots indicated students who were proficient, yellow dots indicate students who required some instructional support, and red dots indicated students who required intensive instructional interventions (Appendix E). Appendix E shows an example of a mCLASS class data display; this example was taken from the Wireless Generation website (n.d). None of the names listed in Appendix E were actual participants in this study.

Interventions

Burst Reading interventions focused on phonemic awareness, phonics, and reading comprehension skills. Lesson sequences are designed to provide precise instruction that fits individual student’s needs. The activities are explicit, systematic, and engaging. The lessons helped to build student confidence and understanding by providing instruction that was exactly paced and leveled to meet each student’s needs (Wireless Generation, 2009). mCLASS Text, Reading, and Comprehension (TRC) interventions are guided reading lessons that include a balance of informational and literary texts. The lessons were aligned with Common Core State Standards and are differentiated to meet the needs of students who are not proficient in reading.
Both the Treatment and Control groups consisted of 6 participants with similar demographics and socio-economic status (see Table 2). Students in the treatment group participated in a 90 minute reading block each day, and received an additional 30 minutes of instructional support using mCLASS Burst® Reading Interventions. All participants in the treatment group received the same intervention lesson sequence. This is because each sequence of Reading Burst interventions are created for a range of DIBELS and TRC scores.

At the end of the ninth intervention day, the researcher progressed monitored students to measure how the interventions were affecting their reading fluency and comprehension. The researcher progressed monitored students using the TRC assessment first. After the TRC assessment was administered to all students, the researcher administered the DIBELS PSF and NWF measures to participants. This process was repeated 3 times because students participated in the intervention group for 6 weeks.

Table 2

Demographics of Control and Treatment Group

<table>
<thead>
<tr>
<th>Group</th>
<th>Gender</th>
<th>Race</th>
<th>Socio-Economic Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Black</td>
</tr>
<tr>
<td>Treatment</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Control</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

Participants in the control group also received a 90-minute reading block, but did not receive additional instructional intervention. Like the treatment group, the control group was progress monitored every 10 days. The twelve participants were progressed monitored a total of three times during a 6 week period.
Figure 1. *Research Design and Components of mCLASS*

1. **mCLASS Components**
   - TRC BOY Benchmark (all students)
   - DIBELS BOY Benchmark (PSF, NWF) – all students

2. **Analyze Data/Select Treatment and Control Groups**

3. **TRC and DIBELS Progress Monitoring Session #1**
   - 9 days of TRC Interventions with treatment group
   - 9 days of Burst Reading Interventions with treatment group

4. **TRC and DIBELS Progress Monitoring Session #2**
   - 9 days of TRC Interventions with treatment group
   - 9 days of Burst Reading Interventions with treatment group

5. **TRC and DIBELS Progress Monitoring Session #3**
   - Analyze Data

6. **Determine Next Steps/Action Plan**
CHAPTER 4: RESULTS

mCLASS incorporated many research based strategies that are believed to improve the reading achievement of 1st grade students who are performing below the proficiency level (Honey, 2007; NCDPI, 2012; Sharp, 2009; Wilson, 2012; Wireless Generation, 2009). This chapter presents how the implementation of Reading Burst interventions and progress monitoring for six weeks affected students reading comprehension and fluency levels in the researcher’s first grade classroom at LES.

DIBELS Results

The first research question this action research study investigated was: How does implementing reading burst interventions affect student fluency levels? To answer this question the researcher analyzed Dynamic Indicators of Basic Early Literacy Skills (DIBELS) data throughout the course of the study.

Two DIBELS measures: Nonsense Word Fluency (NWF) and Phoneme Segmentation Fluency (PSF) were used to measure students phonemic awareness, phonics, and blending abilities.

The researcher compared the beginning of the year DIBELS benchmark scores of the treatment and control group. The mean was used to verify that the two groups did not have considerable academic differences before taking part in the study (See Table 3).

The standard deviation of the PSF control group was significantly higher than the treatment group (See Table 3). The difference was due to an extreme outlier in the control group. The outlier was not discarded because of the small sample size.
Table 3

Comparison of Treatment and Control DIBELS BOY Benchmark Scores

<table>
<thead>
<tr>
<th>Group</th>
<th>Measure</th>
<th>PSF M</th>
<th>SD</th>
<th>NWF – CLS M</th>
<th>SD</th>
<th>NWF – WWR M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Group</td>
<td></td>
<td>25.67</td>
<td>5.75</td>
<td>15.17</td>
<td>10.61</td>
<td>2.83</td>
<td>4.49</td>
</tr>
<tr>
<td>Control Group</td>
<td></td>
<td>23.33</td>
<td>13.50</td>
<td>18.00</td>
<td>10.66</td>
<td>3.17</td>
<td>3.31</td>
</tr>
</tbody>
</table>

After six weeks of interventions and progress monitoring, treatment and control group post intervention DIBELS progress monitoring scores were compared. Table 4 indicates that the mean scores for the treatment group were consistently greater than the mean scores of the control group. This In this study, students who participated in the Reading Burst intervention (treatment) group consistently showed higher growth than students who were assigned to the control group.

Table 4

Comparison of Mean DIBELS Post Progress Monitoring Scores

<table>
<thead>
<tr>
<th>Group</th>
<th>Measure</th>
<th>PSF M</th>
<th>SD</th>
<th>NWF – CLS M</th>
<th>SD</th>
<th>NWF – WWR M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td></td>
<td>43.17</td>
<td>4.83</td>
<td>28.00</td>
<td>12.66</td>
<td>7.67</td>
<td>3.06</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>36.83</td>
<td>10.15</td>
<td>26.33</td>
<td>11.11</td>
<td>6.5</td>
<td>3.62</td>
</tr>
</tbody>
</table>

TRC Results

The second research question that this study investigated was: How does implementing Reading Burst interventions affect student achievement in reading comprehension? In order to answer this question the researcher carefully analyzed Text Reading and Comprehension (TRC) data throughout the study.
After collecting bi-weekly progress monitoring data three times, treatment and control group post intervention Text Reading and Comprehension (TRC) scores were compared. The participants in the treatment group showed a slightly higher level of growth (See Table 5). The achievement gains observed in the TRC treatment group were not as significant as the DIBELS gains discussed earlier in this chapter.

Table 5

*Comparison of TRC Scores for Treatment and Control Groups*

<table>
<thead>
<tr>
<th>Group</th>
<th>BOY Benchmark</th>
<th>3rd PM Session</th>
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<tr>
<td></td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Treatment</td>
<td>2.33</td>
<td>5.17</td>
</tr>
<tr>
<td>Control</td>
<td>2.50</td>
<td>4.83</td>
</tr>
</tbody>
</table>

*SD*

Note: A Reading Correlation Chart (Reading A-Z) was used to convert mCLASS reading levels from alphabetic to numerical value.

In this study, students who participated in Reading Burst intervention groups typically showed greater growth than students who were assigned to the control group. Upon completion of the action research project, the researcher reviewed the data from benchmark and progress monitoring. Results indicated that the treatment group experienced greater gains in fluency and comprehension than the control group.
CHAPTER 5: DISCUSSION

According to Slavin (2007) action research projects should follow a simple process, and take a considerable amount of time and energy to complete effectively. The researcher chose a manageable issue to address, designed a study, collected student data (DIBELS and TRC benchmarks), implemented Reading Burst interventions, collected more data (3 progress monitoring scores), analyzed the data (mCLASS data displays, researcher generated tables), and determined an action plan. The findings suggest that Reading Burst interventions had a positive impact on students reading comprehension and fluency levels. Results indicated that the extra guidance, support, and immediate feedback offered by mCLASS progress monitoring and Reading Burst interventions were beneficial to the treatment group.

Next Steps

Results from the beginning of the year benchmark indicated that approximately 33% of the researchers 1st grade students were performing on or above grade level, which means that approximately 67% of students are not considered proficient in reading. Therefore, there is an immense need for the researcher to be able to address and meet the needs of her struggling readers.

Although progress monitoring data indicated student achievement was improving, the researcher continued to utilize Reading Burst and TRC interventions in order to effectively and efficiently meet the needs of struggling readers (Wireless Generation, 2009). The control group’s overall progress monitoring scores were consistently lower than the treatment group’s. After the completion of the study, the researcher began to provide the control group with Burst Reading and Text Reading Comprehension (TRC) interventions. Mathes (2005) suggests it is likely that
reading growth would be achieved faster if teachers provided struggling readers with regular, targeted interventions designed to meet their instructional needs.

The researcher continued to take part in and implement strategies learned in mCLASS Reading 3D training sessions. These professional training sessions were offered by the curriculum coaches at the researcher’s school, and ensured that the researcher was more knowledgeable about the components of the program and how they can be used in order to best meet the needs of struggling students (Wilson, 2012).

Limitations

The researcher in this study was the 1st grade classroom teacher. She taught all of the guided reading and intervention groups. The researcher worked with both control and treatment groups, and was very familiar with all participants. Because of the researcher’s familiarity with the participants, it is almost impossible to obtain objectivity (Slavin, 2007). It is possible that the researcher may have made assumptions about certain children’s understanding because of her familiarity with the subjects.

The findings from this study call for further examination of the how Reading Burst interventions affect student reading achievement. This study was restricted to one first grade classroom. The sample size was very small. Generalizations cannot be made for other classes, grade levels, or schools because of the limited sample size (N=12).

The duration of this study was six weeks, which is a relatively short amount of time. Kerner and Stevenson (2008) suggest that interventions should last from 8-15 weeks. Because this study only lasted 6 weeks, the researcher was not able to make certain claims because of the short amount of time participants were monitored. Although students appeared to react
positively to Reading Burst interventions and mCLASS progress monitoring; longer, more in-depth studies are needed in order for generalizations to be made.

The researcher noted that committing the extra time for intervention groups each day was a challenge. She expressed a concern about not meeting the needs of students performing at and above proficiency. This was due to the researcher not being able to spend as much time with students who were on grade level because of scheduling constraints.

Conclusion

There has been significant research on how to meet the instructional needs of struggling (Cunningham, Perry, Stanovich, & Stanovich, 2004; Denton, et. al, 2010; Foorman & Torgeson, 2001; Kerner & Stevenson, 2008; Mathes, 2005; National Reading Panel, 2000; Partnership for Reading, 2001). It is more important than ever that students leave 1st grade being a proficient reader. Implementing new, effective interventions along with frequent progress monitoring was an effective way to ensure that the researcher was making her best efforts to identify struggling readers and provide them with the appropriate support.

The results of this study revealed that using Reading Burst inventions along with bi-weekly progress monitoring sessions helped participants in the treatment group make greater gains in reading fluency and comprehension than the control group.

Because this was an action research study, there were limitations in objectivity and generalizability (Slavin, 2007). These limitations are due to the teacher researcher being so familiar with the participants. Continued research on how mCLASS progress monitoring and Reading Burst interventions affect the reading fluency and comprehension of at-risk students may prove beneficial to the reading education of at-risk students.


Lyon, G. R., Fletcher, J. M., Shaywitz, S. E., Shaywitz, B. A., Torgesen, J. K., Wood, F. B.,


Wilson, M. T. (2012). Using the technological pedagogical content knowledge (TPCK) framework to explore teachers’ perceptions of the role of technology in the implementation of mCLASS: Reading 3D (Doctoral dissertation, North Carolina State University). Retrieved from:

http://repository.lib.ncsu.edu/ir/bitstream/1840.16/7514/1/etd.pdf


### Phoneme Segmentation Fluency Practice Scoring Sheet

<table>
<thead>
<tr>
<th>Word</th>
<th>Student Response</th>
<th>Score</th>
<th>Rule/Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>bet</td>
<td>/bl/.../el/.../l</td>
<td>/bl/ /el/ /l/ /</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>/bl/.../et/</td>
<td>/bl/ /el/ /l/</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>/bl/.../l/</td>
<td>/bl/ /el/ /l/</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>/bl/.../el/.../et/</td>
<td>/bl/ /el/ /l/</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>/bl/... (3 seconds)</td>
<td>/bl/ /el/ /l/</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>/bl/...bet</td>
<td>/bl/ /el/ /l/</td>
<td>3</td>
</tr>
<tr>
<td>bet</td>
<td>/bl/ /el/ /l/</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>/bl/.../el/.../k/</td>
<td>/bl/ /el/ /l/</td>
<td>3</td>
</tr>
<tr>
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<td>/bl/.../el/.../l/</td>
<td>/bl/ /el/ /l/</td>
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<td></td>
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<tr>
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</tr>
<tr>
<td></td>
<td>/sl/.../lw/ /rp/</td>
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<tr>
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<tr>
<td></td>
<td>/sl/.../lw/ /rp/</td>
<td>/sl/ /lw/ /rp/</td>
<td>4</td>
</tr>
<tr>
<td></td>
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<td>/sl/ /lw/ /rp/</td>
<td>4</td>
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<tr>
<td></td>
<td>/sl/.../lw/ /rp/</td>
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<td>4</td>
</tr>
<tr>
<td></td>
<td>/sl/.../lw/ (3 seconds)</td>
<td>/sl/ /lw/ /rp/</td>
<td>4</td>
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<tr>
<td></td>
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<td>/sl/ /lw/ /rp/</td>
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</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td>/sl/.../lw/.../rp/</td>
<td>/sl/ /lw/ /rp/</td>
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</tr>
<tr>
<td></td>
<td>/sl/.../lw/.../rp/</td>
<td>/sl/ /lw/ /rp/</td>
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<tr>
<td></td>
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<td>/sl/ /lw/ /rp/</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>/sl/.../lw/.../rp/</td>
<td>/sl/ /lw/ /rp/</td>
<td>4</td>
</tr>
</tbody>
</table>

*said by a student with a speech impairment who pronounces /lh/ for /l/ and /lw/ for /l/

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# Nonsense Word Fluency Practice Scoring Sheet

<table>
<thead>
<tr>
<th>Word</th>
<th>Student Response</th>
<th>Score</th>
<th>Rule/Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>diff</td>
<td>/di/.../i/.../i/</td>
<td>d i f</td>
<td>3/3</td>
</tr>
<tr>
<td>/dul/.../i/.../di/</td>
<td>d i f</td>
<td>3/3</td>
<td></td>
</tr>
<tr>
<td>/dil/</td>
<td>d i f</td>
<td>3/3</td>
<td></td>
</tr>
<tr>
<td>/di/.../i/.../di/</td>
<td>d i f</td>
<td>3/3</td>
<td></td>
</tr>
<tr>
<td>/dil/.../i/</td>
<td>d i f</td>
<td>3/3</td>
<td></td>
</tr>
<tr>
<td>/dil/.../i/</td>
<td>d i f</td>
<td>3/3</td>
<td></td>
</tr>
<tr>
<td>/id/</td>
<td>d i f</td>
<td>3/3</td>
<td></td>
</tr>
<tr>
<td>/led/</td>
<td>d i f</td>
<td>3/3</td>
<td></td>
</tr>
<tr>
<td>/die/</td>
<td>d i f</td>
<td>3/3</td>
<td></td>
</tr>
<tr>
<td>/di/.../i/</td>
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<td>3/3</td>
<td></td>
</tr>
<tr>
<td>/di/.../i/.../i/</td>
<td>d i f</td>
<td>3/3</td>
<td></td>
</tr>
<tr>
<td>/di/.../i/.../i/</td>
<td>d i f</td>
<td>3/3</td>
<td></td>
</tr>
<tr>
<td>/di/.../i/</td>
<td>d i f</td>
<td>3/3</td>
<td></td>
</tr>
</tbody>
</table>

(while correctly pointing to each letter) 
(articulation error) 

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APPENDIX C

Init. Sound Letter ID-2

The purpose of this activity is to give the student an opportunity to practice associating letter names with sounds. You'll say a word and the student will select the letter that spells the initial sound from the 2 letters on the page. The student must be able to isolate phonemes to complete this activity.

Warm Up

We are going to practice linking sounds and letters. I'm going to say a word. When you hear the word, look at the page. There will be 2 letters on the page. Choose the letter that spells the first sound in the word.

Watch me do one. The first word is "bat." The letters on the page are S and B.

I know that the sound /b/ is at the beginning of the word "bat," and the /b/ sound is spelled with the letter B. My answer is /b/, B.

Now let's try one together. The next word is "kite." Say the first sound with me: /k/. The letters on the page are K and M.

Which letter spells the sound /k/? Our answer is /k/, K.

Now it's your turn. The next word is "feet." Say the first sound with me: /f/. Which of these 2 letters spells the /f/ sound?

If Correct: Good. The /f/ sound is spelled with the letter F.

If Incorrect: Let's look at it again. Say the word "feet" with me: feet. What's the first sound? What are the two letters? And which letter spells /f/?

Let's try the word "dog." What's the first sound? Which of these 2 letters spells /d/?

If Correct: Good. The /d/ sound is spelled with the letter D.

If Incorrect: Let's look at it again. The word is "dog." Repeat the word. What's the first sound? What are the two letters here? Which letter spells /d/?
APPENDIX D

Text Reading and Comprehension: Compare and Contrast

Is It a Dog?

<table>
<thead>
<tr>
<th>LESSON INFORMATION</th>
<th>BOOK INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal: Understanding Compare and Contrast</td>
<td>Title: Is It a Dog?</td>
</tr>
<tr>
<td>Time: 40–45 minutes</td>
<td>Copies for you and your students:</td>
</tr>
<tr>
<td>Group Reading Range: A–C</td>
<td>• (color version)</td>
</tr>
<tr>
<td>Small-Group Advisor: 4–6 students</td>
<td>• (black and white version)</td>
</tr>
<tr>
<td>Worksheets:</td>
<td>Genre: Literary Text</td>
</tr>
<tr>
<td>• Compare and Contrast Chart (sufficient copies for</td>
<td></td>
</tr>
<tr>
<td>sample exercises)</td>
<td></td>
</tr>
</tbody>
</table>

Vocabulary: afraid, fur, paw, quiet, sniffs

Build Background About the Text (5–10 minutes)

1. Preview the Text

Hold up a copy of Is It a Dog?

We are going to read a book today. Begin by identifying the basic features of the book, including the front cover, the title, the author, and the illustrator. Can someone point to the title? Guide students in their response. Then point to the title as you read it aloud. Read it again, and encourage students to read aloud with you. There are two names on this book. Let’s look at this one first. Point to and read the author’s name aloud. Who is this person? (the author) Why is this person’s name on the cover of the book? (The person wrote the words inside.) Point to and read the illustrator’s name. Who is this person? (the illustrator) Why is this person’s name on the cover of the book? (The person drew the pictures inside.)

Now let’s look at the illustrations in this book together. As you turn pages, prompt students to describe what they see and to predict what this book will be about. List the students’ predictions on a board or chart. Then, invite students to share if they have ever seen someone make a balloon animal.

2. Introduce the Vocabulary

Ask questions to help define the meanings of new or unknown words in the text. Write the word afraid on a board or chart. Say the word aloud and invite students to repeat after you.

Did you know that this word is used in our book? Let’s look for it. Turn to page 1, point to the word, and read the associated sentence. I’m going to tell you about a time I was afraid. Share a personal example. Can someone tell me what the word afraid means? Can you tell me about a time when you were afraid?

Now let’s look at some other words that you will find in this book. Write the words fur, paw, quiet, and sniffs on a board or chart. Walk the students through the meaning of each of these words as shown in the model above, including offering personal examples to help explain the meanings of words.

3. Introduce the Comprehension Strategy: Compare and Contrast

Use real examples to introduce students to comparing and contrasting.

https://www.mclasshome.com/docs/stat/activities/external/Reading3D_A-C_C_Fiction_Is_It_a_Dog.html
Appendix E

mCLASS Class Data Display Example

<table>
<thead>
<tr>
<th>Grade 1</th>
<th>BOY</th>
<th>MOY</th>
<th>EOY</th>
<th>Recent PM History</th>
<th>Reading Level</th>
<th>Reading Level</th>
<th>Reading Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Comp. Score</td>
<td>Comp. Score</td>
<td>Comp. Score</td>
<td>BOY</td>
<td>MOY</td>
<td>EOY</td>
<td>PM</td>
</tr>
<tr>
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<td>0</td>
<td>0</td>
<td>NWF</td>
<td>E^f</td>
<td>H^o</td>
<td>1^f</td>
</tr>
<tr>
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<td>0</td>
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<td>C^f</td>
<td>RB^o</td>
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<td>0</td>
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<td>E^o</td>
<td>0^o</td>
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<td>G^o</td>
<td>1^o</td>
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<td>H^o</td>
<td>G^o</td>
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<td>D^o</td>
<td>H^o</td>
<td>B^o</td>
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