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Elementary education teachers' acceptability of reading curriculum-based measurements

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Abstract

With prevention models, such as Response to Intervention (RtI), becoming increasingly implemented by schools, it is important to examine special and general elementary education teachers' acceptability of reading curriculum-based measurement (R-CBM). A national sample of 26 elementary education teachers (23 general education, 3 special education) completed an online survey regarding R-CBM. The survey examined teacher acceptability, knowledge, training, resources, and belief that R-CBM is a valid general outcome measure of reading. Results indicated that special education teachers' reported knowledge of R-CBM was statistically greater than general education teachers'. In addition, there was a significant positive correlation between overall knowledge and acceptability of R-CBM. Teachers' belief regarding both resources and that R-CBM is a valid general outcome measure of reading had a significant positive correlation with overall acceptability. Lastly, there was a significant positive correlation between low acceptability of R-CBM and both resources and belief that it is a general outcome measure of reading. Implications for practice and further research are discussed.

Introduction

In the elementary years, a primary challenge facing elementary-level teachers and students is the acquisition of basic reading skills. Lyon & Chhabra (1996) state, "No educational yardstick is used more frequently to evaluate the efficacy of schooling than literacy built upon a firm foundation of basic reading skills." School personnel and the general public understand that reading is a process that is highly involved in other academic skills such as math, science, and social studies. In society, being an efficient reader can determine not only academic success but also personal, social and economic success (Lyon & Chhabra, 1996).

Studies indicate that more than one in six young children experience reading difficulties in grades one through three (Kameenui, 1996). Reading difficulties have been linked to the development of behavioral, emotional, and social problems. This causes great concern for educators and provides a strong rationale for preventing reading difficulties in children (Daniel, Walsh, Goldston, Arnold, Reboussin, & Wood, 2006). Early intervention requires accurate identification of children at risk for reading failure. In general, direct and frequent measures have been most accurate in identifying children with reading problems (Good, Simmons & Smith, 1998). One type of direct and frequent measurement that is gaining increasing attention in education is Curriculum-Based Measurement (CBM).

Curriculum-Based Measurement (CBM)

CBM is a standardized procedure used to assess a child's performance in reading and other basic skill areas (Deno, 1985). CBM in reading, which is referred to as R-CBM, is used to determine a child's overall reading competence by measuring fluency with reading text aloud. This is also referred to as oral reading fluency. The child is asked to read a passage aloud for one minute and at the conclusion, the rate of words read per minute and errors made by the child is

calculated (Deno, Fuchs, Marston, & Shin, 2001).

Research and development of CBM originated in the 1970's when educators were asked by the government to provide evidence of student learning, specifically within special education (Jenkins, Deno, & Mirkin, 1979; Lovitt, 1977; White & Haring, 1980). Stanley Deno and his colleagues at the University of Minnesota designed CBM to provide teachers with a tool that was precise, simple and able to document a student's performance over time (Shinn & Bamonto, 1998).

Features of CBM. CBM was specifically designed for use in formative evaluation. This type of evaluation includes gathering data continuously rather than just at the conclusion of an instructional period (Deno, 1985). CBM procedures, including R-CBM, were developed based on several criteria. (Jenkins, Deno & Mirkin, 1979). The criteria for R-CBM included that it had to connect with what the student was learning in the classroom, be short in duration, able to be administered frequently, capable of having many forms, and inexpensive in relation to money and time (Marston, 1989).

An important characteristic that separates CBM from many other assessment methods used in schools is that it focuses on direct and repeated measurement of student performance. Unlike other measures, such as published, norm-referenced achievement tests, CBM is a direct measurement of the student's performance within the curriculum. CBM is considered a type of achievement test that aims at evaluating "dynamic indicators of basic skills," or DIBS. The tools used within CBM are standardized so that interpretation can be consistent and accurate. With CBM, data is required to be collected on a repeated basis (Shinn & Bamonto, 1998). Repeated measurement resolves problems that are involved in traditional decision making. It allows the

examiner to view the pupil's performance various times throughout the decision making process rather than data from only one assessment situation (Marston, 1989).

With CBM, students are required to actually perform the behavior of concern as opposed to selecting a response from a list of options. This is referred to as production-type responses. The examiner listens to the student read aloud and conducts the assessment on the sample of the behavior. These production-type responses allow the assessor to observe the process the student used to derive the answers. (Popham & Baker, 1970). With this information, the evaluator can determine what the child may be struggling with and specifically design an intervention geared at targeting that weakness.

Another critical component to CBM is the time series analysis of the data. Time series analysis allows the educator to examine a student's progress and evaluate the effectiveness of the instructional intervention at any point during the year. The benefit of this approach is that it allows for timely decision making. Data collected within CBM is sensitive to improvement and changes in progress appear much faster than with traditional psychoeducational assessment. In traditional assessments, progress is not as sensitive and it takes longer to see any significant effects. With this sensitivity to improvement, educators do not need to wait several months or a year to be provided with an effective instructional program, such as with traditional psychoeducational assessments (Marston, 1989).

Use of local norms in decision-making is another component of CBM. Anatasi (1988) suggests that norms are more realistic when they target a more defined population. This is opposed to using norms that are diverse and apply to several different groups of students. Local norms are easily established using CBM. These norms can be used to compare a child's progress

to their class, school or district, which in turn can facilitate special education decisions including screening, eligibility, progress monitoring and program evaluations (Marston, 1989).

Technical Adequacy of R-CBM

The technical adequacy of R-CBM has been examined in many studies. In the area of reading, studies have shown that oral reading fluency, R-CBM, is a reliable and valid reading outcome measure (Deno, Mirkin, & Chiang, 1982; Fuchs, Fuchs, & Maxwell, 1988). The relation between teachers' judgments and R-CBM has also been examined through research. Results indicated that teacher judgment or rating of their students' reading abilities had a strong relationship with R-CBM (Fuchs & Deno, 1981; Marston & Deno, 1982).

Previous research has indicated that school personnel prefer classroom-based assessment procedures, such as CBM, to the more formal, published assessment procedures. Although individual published tests can be useful for specific and important purposes there are some concerns relating to decision making. First, there is much hesitation about the technical adequacy of these measures, which includes reliability, validity, and norms. Other problems include irrelevance for instructional planning, indirect assessment: selection-type responses, fluency is not considered, and the inadequacy of the pre-post test design to evaluate change. Many educators have questioned the usefulness of data from these formal assessments in planning and instruction. In addition, these assessments measure a student's skills indirectly through other tasks besides reading, such as multiple choice answers for reading comprehension. Many of these formal assessments ignore fluency as an essential component of reading. These formal traditional tests are also not sensitive to gains in reading achievement. The test may indicate that there has been no gain when in fact there has been (Marston, 1989).

The Use of CBM in Schools

The intent with the development of CBM was that it examined learning of individual students with disabilities. This individual examination of students was used to document if the student was benefiting from their educational setting or approach. If evidence suggested that the setting or approach seemed to be ineffective for the individual student, then a modification could be initiated (Graney & Shinn, 2005).

Currently, CBM is helpful in gathering evidence of learning on individual students in both general and special education. With this individual data, a teacher can evaluate whether or not an educational program is effective for a student or if it should be modified to fit the student's needs. (Deno, 1992). Having individual data for each student allows the teacher to make specific instructional decisions. Some of these instructional decisions may include determining whether or not to make a program change, the development and placement of students into instructional groups, the ability to identify deficits that the student may be demonstrating, and screening for students who are at risk for failing school. In addition, eligibility decisions may be made, a student's placement can be evaluated, and the reintegration of a student to general education from special education can also be evaluated (Hosp & Hosp, 2003).

Today, teachers face the challenge of managing a high number of instructional and non-instructional responsibilities with regard to academic assessment. Teachers are required to balance their time in regards to collecting data on students' learning and providing effective instruction on various academic skills. CBM is one example of how this challenge may be minimized. CBM is efficient and simple to collect and provides ongoing information that can be

used to guide instruction and improve student performance through early intervention (Hosp & Hosp, 2003).

R-CBM is increasingly generating interest in the general education setting due to its preventative focus (Shinn, Shinn, Hamilton & Clarke, 2002). One model implemented in many schools today is the Response to Intervention Model, also referred to as RtI. Within this model it is important to screen all students within a school, not only the students considered as "at risk." If screening can occur with all students, within both general and special education, early identification of reading problems can take place. The main focus of this preventative model is that educators will not be waiting for the students to "fail" but will be catching the difficulties and intervening at the earliest possible point (Kratochwill, Volpiansky, Clements, & Ball, 2007).

Implementation of R-CBM

A concern involving the execution of CBM by teachers is the lack of consistent implementation, also known as implementation fidelity. Research has shown that implementation of CBM by teachers is highly variable (Reimers, Wacker, & Koeppl, 1987). Even though many special education teachers have acknowledged R-CBM and its benefits, many did not implement it within their classroom. Some factors that affected their implementation of this type of measurement included that it was time consuming and teachers' lacked sufficient knowledge and materials to implement it effectively (Wesson, King & Deno, 1984).

Teachers' resistance to viewing R-CBM as an indicator of overall reading competence also has been indicated through research. Some teachers believe that oral reading fluency, R-CBM, does not reflect the overall reading ability of a group of students who are referred to as "word callers." They believe these students can read aloud fluently at a fast pace, yet there is no comprehension of what they just read, and therefore R-CBM does not provide a valid indicator

of overall reading skill. A study was conducted to examine if teachers' perceptions of this group of "word callers" were accurate. Results indicated that the students who were identified as a "word callers" lack both oral reading fluency and comprehension, not just comprehension alone. This study shed doubt on the existence of "word callers." It is important to understand teachers' perceptions of oral reading fluency as an indicator of overall reading competence. This resistance may inhibit the implementation of R-CBM within their classrooms (Hamilton & Shinn, 2003).

Acceptability of R-CBM

The acceptability of CBM has been specifically examined in several studies. When teachers view an assessment method as acceptable, they are more likely to use it to inform their instruction and to make better decisions. In general, research found that special education teachers rated Curriculum-Based Assessment (CBA), which involves R-CBM, as a more favorable assessment when compared to published norm-referenced tests (PNRT) (Eckert, Shapiro & Lutz, 1995). In addition, studies have shown that other school practitioners prefer CBA, which includes R-CBM, to other assessment methods such as traditional published norm-referenced assessments and brief experimental analysis (Chafouleas, Tillman & Eckert, 2003). However, there are limited studies examining both special and general education teachers' perceptions and acceptability of R-CBM.

Purpose for the Present Study

The purpose for the present study is to conduct further research on both general and special education teachers' acceptability of reading curriculum-based measurements. Most of the research done on the acceptability of R-CBM has only included special education teachers. With prevention models, such as the RtI model becoming increasingly implemented by schools, it is important to understand how both special and general education teachers view R-CBM. Past

studies on the acceptability of R-CBM have indicated that special education teachers view it as an acceptable and beneficial tool that is accurate in identifying children who are having difficulty with reading. However, studies show that the implementation of this measure varies. The purpose of the current study was to further examine if general and special education teachers have an understanding of what R-CBM is and the benefits associated. In addition, it will examine if there is a relationship between the acceptability of R-CBM and several factors, such as knowledge, training, resources and belief that R-CBM is a valid general outcome measure of reading. This study will specifically address the following research questions:

1. What knowledge do special and general elementary education teachers have of R-CBM and do they view it as an acceptable tool?
2. Are there any differences in the acceptability and knowledge between general and special elementary education teachers?
3. What is the relationship between:
    a. Acceptability and knowledge?
    b. Acceptability and training?
    c. Acceptability and resources?
    d. Acceptability and belief that R-CBM is a valid General Outcome Measure (GOM) of reading?
4. Is there a relationship between low acceptability and inhibiting factors such as knowledge, training, resources, and belief that R-CBM is a valid GOM of reading?

Literature Review

Curriculum-Based Measurement (C-BM) is a tool that is gaining increasing attention within education today; however, it is a tool that has been used by educators for many years. Research has indicated the associated benefits, technical adequacy, and beneficial uses of R-CBM for both general and special education teachers. However, several factors inhibit the implementation of this tool. One factor that may determine whether or not a teacher implements R-CBM is their acceptability of it. The current research aims to examine teachers' acceptability of R-CBM.

Curriculum-Based Measurement

CBM was developed in the 1970's by Stanley Deno and his colleagues at the University of Minnesota's Institute for Research on Learning Disabilities. Deno and several colleagues developed CBM to provide educators with efficient and precise ways to assess decisions related to instruction within special education. He strove to give special education teachers a measurement that could document ongoing evidence of student's learning. With Deno's development of CBM, educators could collect, graph and evaluate data of student learning through a simple yet efficient measure (Shinn & Bamonto, 1998).

CBM is a set of standardized procedures used to assess student performance in reading, spelling, written expression and math (Deno, 1985). CBM in reading is also referred to as R-CBM. R-CBM requires students to read a passage aloud for one minute. The number of words read correctly is used as the index for CBM passage reading. In addition, errors the student makes during reading may be used as supplemental information. Another measurement of reading is referred to as the maze task, in which the student reads a passage (aloud or silently) for 2.5 minutes. In this reading passage, every seventh word is deleted from the text. The student is

asked to replace the missing word by selecting one of three words that will restore meaning to what is being read. The number of correct replacements is used as the index for CBM maze passages (Deno, Fuchs, Marston, & Shin, 2001). R-CBM tends to be used more frequently in schools than the maze task.

R-CBM as a Measure of Oral Reading Fluency. Reading fluency is achieved when the translation of print to speech becomes automatic for the reader. (Logan, 1997). Therefore, a critical characteristic of a student who excels in reading is the speed in which he/she is able to say the text aloud. In addition to speed, accuracy of what the student is reading aloud is a critical component of oral reading fluency (Adams, 1990). The theory that fluency is a measure of overall reading competence is supported. This overall reading competence also includes comprehension of what is being read. Models from LaBerge & Samuels (1974) and Stanovich (2000) share the assumption that when decoding becomes automatic, higher level comprehension processing occurs (Fuchs, Fuchs, Hosp & Jenkins, 2001).

There has been an increasing focus on the topic of oral reading fluency and its measurement. Some examples of the increasing focus on the assessment of a student's oral reading fluency include committees, such as the Committee for Appropriate Literacy Evaluation, recommending that schools regularly record students' oral reading fluency (Stayter & Allington, 1991). In some cases, teachers and researchers have ignored the significance of oral reading fluency.

Technical Adequacy of CBM

In the area of reading, several different behaviors have been examined as possible outcome measures, including reading words in isolation, reading words in context, oral reading fluency, cloze comprehension and word meaning. Of the behaviors investigated, oral reading

fluency has consistently been determined to be the most reliable and valid reading outcome measure (Deno, Mirkin, & Chiang, 1982; Fuchs, Fuchs, & Maxwell, 1988; Marston & Magnusson, 1985; Shinn, Good, Knuston, Tilly & Collins, 1992). Deno, Mirkin, & Chiang (1982) examined student reading performance on standardized achievement and formative measures, such as CBM. Correlational analyses were conducted on five formative measures, which included Words in Isolation, Words in Context, Oral Reading, Comprehension, and Word Meaning, and standardized measures, including parts of the Standford Diagnostic Reading Test (SDRT), and The Woodcock Reading Mastery Test. Results of the research provided evidence for the reliability and validity of three formative measures of reading proficiency. The results of this research provided high reliability and validity coefficients; therefore these quick and easy formative measures were determined to be just as valid and reliable as the time consuming published reading measures.

Additional studies examined the validity of R-CBM. A study by Marston and Magnusson (1985) researched the benefits of implementing curriculum-based measurements in both regular and special education settings. To determine the validity of CBM, student reading performance on oral reading measures were compared to several published reading measures including parts of The Stanford Achievement Test, The SRA Achievement Series, and the Ginn 720 Reading Series. Results indicated that the validity coefficients ranged from .80 to.90. Teachers also were asked to rank their students' reading achievement level on a scale of one to five. The teachers' judgment of their students' performance was then correlated with performance on both CBM and standardized reading measures. Results of the correlations indicated that CBM, words read aloud, had significantly greater correlation coefficients with teacher judgment than any of the standardized reading measures. Due to the high reliability and validity of CBM, educators within

the study were able to use the data derived from CBM to make decisions involving student placement, progress and the effectiveness of implemented interventions within their school.

Research on the technical adequacy of oral reading fluency have provided evidence of test-retest reliability coefficients ranging from .92 to .97 and parallel form reliability coefficients ranging between .89 and .94 (Tindal, Germann, & Deno, 1983; Tindal, Marston, & Deno, 1983). Criterion-related validity coefficients comparing oral reading fluency with published reading achievement tests have ranged between .73 and .81 (Marston, 1989). In addition, oral reading fluency has been shown to differentiate among students in general, special, and remedial education programs (Marston & Magnusson, 1985; Shinn & Marston, 1985).

Research has examined the relationship between CBM reading measures and teachers' holistic rating of students' reading ability. Fuchs and Deno (1981) found that for a group of 91 first through sixth graders sampled from both regular and special education settings, CBM reading measures were highly related to teachers' judgment of student reading proficiency. In a study by Marston and Deno (1982), the relationship between R-CBM and teacher holistic ratings of reading skills was significantly greater than teacher ratings with published achievement tests. This means that teachers' rating of their students' abilities corresponded more highly with CBM than with Published Norm Referenced Tests PRNT. These findings provide evidence of R-CBM's criterion-related validity.

Resistance to CBM as an Indicator of Overall Reading

Even though ample research exists to support the notion that oral reading fluency is a reliable and valid indicator of overall reading competence, including comprehension, some educators believe that it solely measures decoding skills. A study done by Shinn, Good, Knuston, Tilly & Collins (1992) investigated whether CBM oral reading fluency was significant in a

single–factor model of reading or if it should be better categorized in a decoding, comprehension, or a separate construct. These reading models were tested using a confirmatory analysis with third and fifth graders. Each student was tested with a variety of measures including R-CBM oral reading fluency, decoding tasks, and comprehension tasks. Results of the research supported the reliability and validity of CBM oral reading fluency as measure of overall reading proficiency including comprehension, not just decoding as believed.

In challenging the notion that a 1-minute measure of oral reading could reflect a student's comprehension, teachers often point to the phenomenon of the "word caller," i.e., a student who can read text fluently but lacks comprehension. Hamilton & Shinn (2003) conducted research to determine if teachers' perceptions about "word callers" were accurate. The study examined the oral reading and comprehension skills of teacher-identified "word callers" to test whether they read fluently, but lacked comprehension. Teachers who participated in the study were asked to identify a student who matched the description of a "word caller." These students were compared peers whom the teachers had identified as "similarly fluent." R-CBM, CBM-Maze, a comprehension oral question answering test (CQT), and the passage comprehension subtest of the Woodcock Johnson Reading Mastery Test were administered to both groups of students. Results of the study failed to support the notion that "word callers" and their similarly fluent peers read aloud equally well. Students who were identified by their teachers as being "word callers" read fewer correct words per minute and earned significantly lower scores on the comprehension measures than students who were identified as fluent readers.

This study found that teachers were not accurate in their prediction of either group's actual reading scores on all measures, but were most inaccurate in their prediction of "word callers" oral reading scores. It provides evidence that those teachers who do not view R-CBM as

a general reading outcome indicator often cite their own experiences regarding a student who reads fluently, but cannot comprehend. This study concluded that the students who were identified by their teachers as "word callers" do not fit this profile.

Teachers' beliefs on oral reading fluency as an overall reading indicator also were researched by Foegen, Espin, Allinder, and Markell, 2001. Within this study, the researchers examined preservice teachers' belief of CBM's validity and utility. Preservice teachers were presented with information relating to CBM through one of two presentation formats. These presentation formats included teachers receiving statistical information or anecdotal information relating to CBM. Participants then took a survey to examine their beliefs of CBM's as a valid and useful tool. Results indicated that there was no difference in the reported validity and utility of CBM between presentation formats. However, results did indicate that preservice teachers' beliefs about CBM's utility were better than its validity (Foegen, Espin, Allinder, Markell, 2001). This resistance to oral reading fluency as a valid indicator of reading fluency may influence the effective implementation of R-CBM as an indicator of overall reading competence (Fuchs et al., 2001).

History of CBM in Schools

With Public Law 94-142, an increased pressure on schools evolved to provide evidence of student learning. This increased pressure sparked an interest in alternative testing methods to what was being used in schools at that time. This testing, which was referred to as curriculum-based testing, was developed to record any decisions that may have affected special education students. (Jenkins, Deno, & Mirkin, 1979; Lovitt, 1977; White & Haring, 1980).

Special Education Teachers and R-CBM

Several studies have examined the effectiveness of implementing CBM in special education classrooms. Fuchs, Deno and Mirkin (1984) examined the educational effects of teachers' use of formative evaluation with R-CBM on special education students. Within the study, 39 special education teachers were split into two separate experimental conditions, the curriculum-based measurement experimental group or to the "conventional" contrast group. Teachers within the curriculum-based measurement experimental group were trained to use data-based program modification (DBPM), a "repeated assessment system." Specifically, teachers within this group came up with IEP goals and objectives for their special education students. After specific goals and objectives were stated for each student, the teachers were required to develop curriculum-based measurement systems to correspond. Student progress was evaluated twice a week using DBPM and if students were not obtaining adequate progress then an instructional change took place. Teachers within the "conventional" control group were also asked to develop IEP goals and objectives for their students; however, they were not required to frequently monitor student progress. Student progress was not measured by DBPM but by tests made by the teacher, observations, and instructional exercises (Deno & Mirkin, 1977).

R-CBM was used to obtain a pre and post measurement of student reading on all of the students within the study. In addition, two subtests within the Stanford Diagnostic Reading Test, Structural Analysis (SA) and Reading Comprehension (RC), were given to each student at the conclusion of the study. These subtests measured students' reading skills such as decoding and comprehension. Teachers in both conditions were required to measure their instructional structure using the Structure of Instruction Rating Scale (SIRS). Some of the variables within this rating scale included active academic responding, positive consequences, pacing, and oral

and silent reading practice. In addition, teachers completed a questionnaire before and after the study and a student interview was conducted (Fuchs, Deno & Mirkin, 1984).

Results of the study indicated that students who were instructed and assessed using curriculum-based measurement preformed better academically overall. Students within this group preformed significantly better on R-CBM and the SA and RC subtests than students in the control group. The DBPM group's superior performance on the reading passage and decoding and comprehension subtests provided support that teachers were more effective when using formative evaluation measures with CBM. Results also indicated that teacher structure increased within the experimental condition and decreased in the control group. Results from the teacher questionnaire indicated that teachers within the DBPM group reported that they had a vast amount of data to help aid them in their instructional decisions. In contrast, teachers within the control group reported that they were more "unsure" about their instructional decisions due to the lack of data (Fuchs, Deno & Mirkin, 1984).

Student awareness of their own learning was assessed through the student interview. Students within the experimental condition reported that they felt more aware of their learning, which included knowledge of their goals, accurate estimates of their goals, and use of data to determine if a goal would be accomplished. Overall, results suggested that curriculum-based measurement was very beneficial to the special education population, including both teachers and students (Fuchs, Deno & Mirkin, 1984).

Fuchs and Fuchs (1986) also examined the effects of formative evaluation within special educational programs and student academic achievement. A meta–analysis of 21 studies relating to the topic of systematic formative evaluation was conducted. Results of the meta-analysis indicated that student achievement significantly increased when systematic formative evaluation

was implemented. In addition, results indicated that systematic formative evaluation was effective no matter what age the student was, how long it was implemented, how frequently student progress was assessed or the nature of the student's disability. However, formative evaluation was more effective when teachers were given specific rules for using the data to make decisions. Rules within systematic formative evaluation included specifics of when teachers should make an instructional change if a student was not making progress after a certain amount of time. Also, studies where both behavior modification and systematic formative evaluation were implemented had a larger effect size than when just systematic formative evaluation was implemented. The meta-analysis also indicated that when teachers had a visual representation of student progress, through graphs or charts, effect sizes on student achievement were higher than teachers who had no display of student progress. Due to the large effect size associated with systematic formative evaluation, implementation of it within special education is highly supported (Fuchs & Fuchs, 1986).

General Education Teachers and R-CBM

Increasingly, R-CBM has been of interest to general education teachers due to its prevention focus (Shinn, Shinn, Hamilton, & Clarke, 2002). This preventative focus includes screening all students within a school, not just the students who are considered "at risk." A critical component of this preventative focus is early identification of students who are struggling and not waiting until these students "fail". One particular model that is being implemented in many schools is the Response to Intervention Model (RtI). Screening and early identification of students who are struggling academically are highly promoted through the RtI model and typically involve general education teachers (Kratochwill, Volpiansky, Clements, & Ball, 2007).

General education teachers are vital members within the RtI process. Their roles are

rapidly changing to include participating in the development of a RtI model within their schools, team collaboration, learning new strategies, implementing new strategies within their classrooms, and participating in professional development (NEA, 2006). Some specific responsibilities include administering R-CBM to students, collecting the data, and using it for instructional purposes. As indicated, there is limited research on general education teachers' acceptability of R-CBM. Therefore, it is important to examine their opinions regarding this topic.

Implementation of CBM within Schools

Generalization from studies to classroom application has shown to be a concern with R-CBM. (Casey, Deno, Marston, & Skiba, 1988). Another concern that is brought forward is implementation fidelity, which refers to the idea that when R-CBM is transferred to classroom use, consistent implementation is not always reinforced (Martens, Witt, Elliott, & Darveaux, 1985). This lack of consistency may affect the ability for educators to replicate the successful research results. (Reimers, Wacker, & Koeppl, 1987).

Although research has shown CBM as being a more acceptable method of assessment than norm-referenced tests, several investigators found it important to specifically examine how this research translated into practice. Research examining this suggests that teachers vary in their implementation of CBM (Allinder, 1994; Wesson, Skiba, Sevcik, King, & Deno, 1984). Quality of implementation appears to be affected by a variety of factors. Allinder (1994) found that perceived adequacy of planning time was an important variable in distinguishing teachers who did from those who did not implement CBM effectively.

Special education teachers' use of CBM was examined by Wesson, King & Deno (1984). The purpose of the study was to examine the reasons why teachers did not implement these strategies. Specifically, the study examined (a) what percentage of special education teachers had

heard of direct and frequent measurement (b) what percentage of those teachers used the direct and frequent measurement (c) for those teachers who use direct and frequent measurement, what percent of time they allocated to the measurement of student behavior in the classroom and (d) for those teachers who did not use direct and frequent measurement, what factors inhibited their use of this type of measurement (Wesson et al., 1984).

Results indicated that the majority (82.1%) of the teachers in the study had heard about direct and frequent measurement. Of the 82.1% of teachers that reported they had knowledge of direct and frequent measurement only 53.6 reported that they used this type of measurement in their classroom. The majority of teachers that reported using direct and frequent measurement indicated that it took up about 10% of their time (Wesson, et al., 1984). It should be noted that this study only examined special education teachers. General education teachers were not included in this study.

In the Wesson et al. (1984) study, teachers reported a number of factors that inhibited their use of direct and frequent measurement. The factor that was mentioned the most by the special education teachers was that this type of measurement was time consuming. Another factor indicated was a lack of knowledge of how to use direct and frequent measurement. Other factors inhibiting the use of direct and frequent measurement included lack of materials, use of the evaluation techniques and lack of usefulness of direct and frequent measurement.

Acceptability of CBM

One factor that may determine whether or not a teacher implements R-CBM is whether or not they view it as an acceptable tool. To examine teachers' acceptability of R-CBM it is important to understand teacher's conceptions of assessments in general. These conceptions may be understood in terms of their agreement or disagreement with four purposes, including (a)

improvement of teaching and learning (b) school accountability (c) student accountability or (d) and the relevance of assessment (Brown, 2004). The study of teachers' conceptions of assessment is important because teachers' conceptions of teaching, learning, and curricula influence strongly how they teach and what students learn or achieve (Clark & Peterson, 1986; Pajares, 1992; Thompson, 1992; Calderhead, 1996).

As mentioned, acceptability is vital in the implementation of CBM. Acceptability is considered to be a subset of the larger domain of social validity or how relevant and useful the results are to the stakeholders. It refers to the need for positive consumer feedback, which validates the use of a specific technique or procedure (Eckert & Hintze, 2000). Acceptability as it pertains to assessment measures has been specifically defined as consumer perception of the degree to which a method is appropriate, fair, non-intrusive, and helpful in designing and implementing effective interventions (Shapiro & Eckert, 1994). It is vital to understand if teachers perceive an assessment process as favorable. If teachers do not find an assessment acceptable, direct benefits to decision-making and intervention strategies are unlikely. Examining the acceptability of procedures is crucial if the procedure is to have a successful impact. As Woff (1978) stated, "If the participants don't like the treatment, then they may avoid it, or run away, or complain loudly" (Eckert, Shapiro & Lutz, 1995).Research has found that in general, an assessment is more acceptable if (a) the problem it addresses is severe (Reimers et al., 1987); (b) it is not time-consuming (Witt, Elliott, & Martens, 1984; Witt & Martens, 1983); (c) it has limited or no negative side effects (Kazdin, 1981); and (d) it is aligned with the users' personal qualities (Kazdin & Cole, 1981; Tarnowski, Mulick, & Rasnake, 1990; Woolfolk, Woolfolk, & Wilson, 1977).

In a study conducted by Brown (2004), primary school teachers completed a 50-item Teachers' Conceptions of Assessment (COA-III) questionnaire. The questionnaire examined teachers' opinion of assessments improvement of teaching and learning, schools accountability, student accountability and its relevance. Results indicated that on average, teachers agreed with the improvement conceptions and the school accountability conception. They also agreed that assessment is relevant and needed within education. Teachers believed that assessment does have a legitimate place within teaching and learning. In addition, results indicated that teachers disagreed that assessment was for student accountability. They believed that students should not be held individually accountable for their learning through assessment (Brown, 2004).

Teachers' ratings on the acceptability of two pyschoeducational assessment techniques, curriculum-based measurement and published norm-referenced tests (PNRT) were examined by Eckert, Shapiro & Lutz (1995). General and special education teachers' acceptability ratings of CBM and PNRT were assessed by the Assessment Rating Profile (ARP), which is an 18 item, five point Likert scale with ranges from "*strongly agree*" to "*strongly disagree*."

Overall, the results of this study indicated that teachers, whether in special or regular education, rated CBM procedures as highly acceptable, more so than PNRT procedures. CBM was viewed as an effective and appropriate approach in assessing academic skill problems. In addition, CBM procedures were viewed as being a proactive approach to intervention as well as interpreted as a "*likeable*" approach for assessment of academic skills problems. It is important to note that there are limited studies of general education teachers' acceptability of R-CBM.

Summary

As mentioned, many children today struggle with reading problems. These reading problems need to be addressed early on so there is a better chance that interventions may be

implemented. R-CBM is a measurement that allows educators to identify reading deficits at the earliest possible point (Good, Simmons, & Smith, 1998). Schools are increasingly implementing preventative models, which involve all students in a school, to enhance this early identification. Preventative models, such as RtI, greatly involve the use of R-CBM (Shinn, Shinn, Hamilton, Clarke, 2002). Some of the uses of R-CBM include monitoring a student's reading progress and evaluating the effectiveness of reading interventions (Kratochwill, Volpiansky, Clements, & Ball, 2007). In general, R-CBM has been found to be an acceptable measure with special education teachers, however, limited studies involving the acceptability of R-CBM by general education teachers have been conducted (Eckert, Shapiro, & Lutz, 1995). In addition, implementation and inhibiting factors have been determined to be concerns related to R-CBM (Casey, Deno, Marston, & Skiba, 1988; Wesson, King, & Deno, 1984).

Method

Participants

For this study, a survey was sent to 1,000 randomly selected kindergarten through fifth grade teachers. Of those who received the survey, 26 teachers (23 general education, 3 special education) completed it, which placed the response rate at 2.6 percent. The participants were drawn from a national sample and included teachers from various regions of the United States (6 Northeastern, 7 Midwestern, 10 Western, and 3 Southern).

Sampling Procedures. The researcher used the United States Department of Education Institute of Education website to obtain a national sample of teachers. A national sample of public elementary schools was specifically obtained from the Common Core of Data (CCD) database. CCD is a database of all public elementary and secondary school districts in the United States. The CCD collects information from public elementary and secondary schools on three categories. These categories include general descriptive information, data on students and staff, and fiscal data. The CCD database listed public elementary and secondary schools within each of the 50 states. To sample the participants in this study, the researcher used the CCD data to target 10 states across the United States. These targeted states included New York, North Carolina, Utah, Florida, Minnesota, Kansas, Texas, Oregon, Washington and California. The researcher selected these states to ensure that each geographic area of the United States would be included within the sample.

For each of the 10 targeted states, the researcher randomly selected 10 public schools from the CCD database. For this random selection, the researcher selected every fifth school located on the list. If the selected school was not an elementary school, the researcher selected the next elementary school on the list. This procedure was conducted until 10 schools were

selected for each state (100 schools total). After the 100 schools were randomly selected, the researcher located the appropriate district websites to obtain teacher emails from online staff directories. Once the researcher located the appropriate online staff directories, the researcher selected every other elementary teacher within the directory until 10 teachers were selected for each school. At the end of the sampling procedure, the researcher obtained a national sample of 1,000 elementary teachers.

Demographics of Selected Schools. Across the 100 elementary schools sampled, enrollment ranged from 70 to 976 students. The mean enrollment was 451 students. All 100 schools were indicated to be general education schools, which was defined as "a public elementary school." Lastly, locale type for each of the 100 schools was examined. Results indicated that 39 schools were considered rural, 31 were located in a suburb setting, 15 were indicated to be in a town, and 15 were located in a city setting.

Measures

Teacher knowledge and acceptability of R-CBM was measured using a survey developed by the researcher. The survey was adapted by the researcher from an instrument used in a study done by Wesson (1984). First, the participants were asked to complete demographic and background questions. These demographic questions addressed the gender of the participant, educational setting and demographic area of the United States that they taught in. In addition, they were asked if their school implements R-CBM, an estimation of how long R-CBM has been implemented, training received on R-CBM and if that training was adequate. Please refer to Appendix B for the demographic questions. The second section included a survey on the acceptability of R-CBM. The questions addressed teachers' opinions on overall acceptability, knowledge, training, resources, and the belief that R-CBM is a general outcome measure of

reading. The survey questions used a 6 point Likert scale (where 1= *Strongly Disagree* to 5= *Strongly Agree,* 6=*Not Applicable*). Please refer to Appendix C for the survey questions.

Within these survey items, the researcher calculated five summary scores for acceptability, knowledge, training, resources, and belief that R-CBM is a valid general outcome measure of reading. Each of the items used the Likert scale previously indicated; however, any responses that were indicated as "*Not Applicable*" was not included in the total summary scores. Therefore, each item contained 5 possible points. The acceptability summary score included items 10, 11, and 19 of the survey. This summary score contained 15 possible points. These questions examined teachers' opinions regarding whether they like to use R-CBM in their classroom, its usefulness in making instructional decisions and whether the time spent on R-CBM is beneficial and worthwhile.

The knowledge summary score included items 8 and 9 of the survey and asked teachers if they had heard of R-CBM and if they had a basic understanding of it. Therefore, the knowledge summary score contained a total of 10 possible points. The training summary score was also out of 10 points and included items 15 and 16. This examined if teachers felt they had adequate training and if they felt comfortable interpreting R-CBM results. The resource summary score included items 12, 14, and 17 of the survey and had 15 possible points. These questions were used to solicit teachers' opinions regarding time spent on R-CBM, intrusiveness into instructional time, and the materials needed to implement R-CBM within their classroom. Lastly, a summary score for the belief that R-CBM is a general outcome measure of reading was calculated and included items 13 and 18. This summary score, which was out of a possible 10 points, examined teachers' opinion on the belief that R-CBM is a valid and accurate predictor of overall reading competence and its appropriateness to use on a variety of students.

Pilot Survey

Prior to administering the survey, the researcher piloted it to ensure that the questions were adequate and understandable to participants. The researcher randomly selected five public schools from the western New York area and obtained teacher emails from district websites. The surveys were sent by email to 100 teachers and directed them to the survey using an online survey system. The pilot survey included both demographic and survey questions relating to the acceptability and implementation of R-CBM. At the end of the survey, participants were asked to provide the researcher with feedback and comments to ensure that the survey and the questions were comprehensive and clear. Eleven participants completed the pilot survey. These participants included elementary education teachers from the Western New York Area (4 males, 7 females). Eight of the participants indicated that they taught in a general education setting, two indicated that they taught in special education and one taught in another setting that was not specified. Results of the pilot survey indicated that the majority of participants, 8 out of 11, completed the survey in less than 5 minutes. Three out of the 11 participants estimated that the survey took approximately 5-10 minutes to complete. The researcher made the recommended changes to the pilot survey that was provided by participant feedback. Changes to the survey included giving participants the option to specify what other types of reading measures they used within their classrooms rather than just giving them the option to select "other".

Procedure

For the current study, the participants anonymously completed the survey electronically. The participants were sent an email that provided them with a cover letter including the purpose of the study, a description of Reading Curriculum-Based Measurement, a description of the survey and how confidentiality would be maintained. It also included anticipated benefits,

incentives and researcher contact information. Please see Appendix A for the cover letter. The surveys were sent by email and directed the participant to the survey using Survey Monkey, an easy to use, online survey system. The survey was sent a total of three times across a time period of approximately 10 weeks. After completing the survey, participants had the option to enter in a raffle for a national spa gift card. If they choose to enter the raffle, they were required to enter their contact information. This contact information was not linked to their answers on the survey. When the data collection was complete, the survey was removed from the Survey Monkey system and all emails containing the participants' contact information were permanently deleted.

Data Analysis

Descriptive statistics, such as means and standard deviations, were used to evaluate the responses involving the acceptability and knowledge scales. These descriptive statistics were used to evaluate the overall perceptions of R-CBM by general and special elementary education teachers. *T*-tests were used to evaluate a possible difference in acceptability and knowledge between general and special education teachers. Finally, Spearman correlations were used to examine if there was a relationship between acceptability and factors including knowledge, training, resources and belief that R-CBM is a valid measure of reading competence. In addition, Spearman correlations were used to examine the relationship between low acceptability and factors including knowledge, training, resources, and belief that R-CBM is a general outcome measure of reading. Low acceptability was determined by acceptability summary scores lower than 9. The low acceptability summary score was then compared to the knowledge, training, resources, and belief that R-CBM is a valid general outcome measure of reading summary scores.

Results

Knowledge and Acceptability of R-CBM

Survey statistics were obtained from 26 elementary education teachers from across the United States. Twenty-three of the teachers taught in a general education setting (N=23) and three teachers taught in a special education setting (N=3). Overall, the mean number on the Knowledge summary score for the total sample of elementary education teachers was 7.12 out of 10 (SD=2.37). The mean number on the Knowledge summary score for general education teachers was 6.83 out of 10 (*SD*=2.37) while the mean number for special education teachers was 9.33 out of 10 (*SD*=.577).

Overall, the mean number on the Acceptability summary score for the total sample of teachers was 8.75 out of 15 (SD=3.35). The mean number for general education teachers was 8.71 out of 15 (SD=3.55) while the mean number for special education teachers was 9.00 (SD=1.73). Please refer to Table 1 for the summary of the items and summary scores of the survey.

Table 1

Summary of Means and Standard Deviations for Total Sample, General Education Teachers and Special Education Teachers on Items/Summary Scores of Survey

Item/**Summary Score**	Total Sample		General Education Teachers		Special Education Teachers	
	M	*SD*	*M*	*SD*	*M*	*SD*
Item 10	3.19	.928	3.24	.974	3.33	.577
Item 11	3.30	.926	3.36	1.08	3.33	.577
Item 19	3.19	1.12	3.29	1.27	2.33	.577
Acceptability (Out of 15 points)	**8.75**	**3.35**	**8.71**	**3.55**	**9.00**	**1.73**
Item 8	4.20	.866	4.21	.893	4.67	.577
Item 9	3.23	1.48	3.36	1.45	4.67	.577
Knowledge (Out of 10 points)	**7.12**	**2.37**	**6.83**	**2.37**	**9.33**	**.577**
Item 15	2.72	1.23	2.43	.938	4.33	.577
Item 16	2.62	1.20	2.50	1.02	3.67	1.53
Training (Out of 10 points)	**5.23**	**2.39**	**4.93**	**1.77**	**8.00**	**2.00**
Item 12	3.70	1.30	3.86	1.29	3.67	.577
Item 14	2.60	1.05	2.86	1.10		
Item 17	2.53	1.22	2.36	1.15		
Resources (Out of 15 points)	**7.82**	**3.39**	**9.07**	**2.87**	**8.00**	**1.00**
Item 13	2.36	.953	2.50	1.10	2.33	.577
Item 18	3.26	1.24	3.36	1.22		
Belief that R-CBM is a GOM of Reading (Out of 10 points)	**5.18**	**2.13**	**5.86**	**1.70**	**5.33**	**.577**

Note. Each individual item was rated on a 5 point scale.

Differences in Knowledge of R-CBM between General and Special Education Teachers

An independent samples *t*-test was used to compare the mean scores of special and general education teachers' knowledge of R-CBM. The independent sample *t*-test assumes that the dependent variable is normally distributed, the groups are independent of each other, and there is a homogeneity of variance. These assumptions were assessed in several ways. Statistical tests used to examine normality included the Shapiro-Wilk test, inspection of the histogram, normal probability plots, detrended normal probability plots, and box plots. In the special education setting, the Shapiro Wilk test, histogram, normal probability plot, and detrended probability plot and box plot suggested a departure from normality. Due to the small sample size and departure from normality, the results of the *t*-test should be interpreted with caution. Levene's test for Equality of Variances was significant (p=.039) so equal variances were not assumed for this *t*-test. Results of the independent *t*-test indicated that the mean difference between general and special elementary education teachers' knowledge of R-CBM was statistically significant (t=-1.80, df=24, p=.001, CI_{95}=-3.78 to -1.23) at α=.05, two tailed. Please see Table 2 for this analysis.

Table 2

Summary of t-test between Special and General Education Teachers' Knowledge of R-CBM

	t-test for Equality of Means			
	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% CI of the Difference
KNOWLEDGE *(Equal Variances Not Assumed)*	.001	-2.51	.596	-3.78 - 1.23

Note. CI= confidence interval.

Differences in Acceptability of R-CBM between General and Special Education Teachers

An independent samples *t*-test was also conducted to compare the mean scores of special and general education teachers' overall acceptability of R-CBM. In the special education setting, the Shapiro Wilk test, histogram, normal probability plot, detrended probability plot, and box plot suggested a departure from normality. This violates one of the assumptions of an independent samples t-test. Results of the independent samples *t*-test indicated that the mean difference between general and special education teachers' overall acceptability of R-CBM was not statistically significant (t=-.135, df=22, p=.894, CI_{95}=-4.67-4.10) at α=.05, two tailed. Please refer to Table 3 on the next page for this analysis.

Table 3

Summary of t-test between Special and General Education Teachers' Acceptability of R-CBM

	t-test for Equality of Means			
	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% CI of the Difference
ACCEPTABILITY *(Equal Variances Assumed)*	.894	-.286	2.11	-4.67 - 4.10

Note. CI= confidence interval.

Relationship between Acceptability of R-CBM and Knowledge

The researcher used the Spearman Rho correlation due to the ordinal nature of the variables. Results indicated that there was a significant correlation between the Knowledge summary score and the Acceptability summary score (r_s=.463, N=24, p=.023). In addition, results indicated a significant correlation between Item 9 and the Acceptability summary score (r_s=.421, N=24, p=.040). Please refer to Table 4 on the next page for a summary of these correlations.

Table 4

Summary of Intercorrelations for scores on Acceptability, Knowledge, and Item 8, and Item 9 of the Survey

Variables	1	2	3	4
1. Acceptability	-			
2. Knowledge	.463*	-		
3. Item 8	.291	.761**	-	
4. Item 9	.421*	.869**	.527**	-

*Note. *p <.05; **p < .01.*

Relationship between Acceptability of R-CBM and Training

Results of the correlation indicated that there was no significant relationship between the Acceptability summary score and the Training summary score (r_s=-.081, N=21, p=.728). In addition, results indicated that there were no significant correlations between Items 15 or 16 and the Acceptability summary score. Please see Table 5 on the next page for a summary of these correlations.

Table 5

Summary of Intercorrelations for scores on Acceptability, Training, Item 15, and Item 16 of the Survey

Variables	1	2	3	4
1. Acceptability	-			
2. Training	-.081	-		
3. Item 15	-.064	.929**	-	
4. Item 16	-.009	.925**	.753**	-

*Note. *p <.05; **p < .01.*

Relationship between Acceptability of R-CBM and Resources

There was a significant positive correlation between the Acceptability summary score and the Resources summary score (r_s=.618, N=22, p=.002). Specifically, there was a significant correlation between Item 12 and the Acceptability summary score (r_s=.599, N=20, p=.005). In addition, there was a significant correlation between Item 14 and the Acceptability summary score (r_s=.668, N=20, p=.001). Please see Table 6 on the next page for a summary of these correlations.

Table 6

Summary of Intercorrelations for scores on Acceptability, Resources, Item 12, Item 14, and Item 17 of the Survey

Variables	1	2	3	4	5
1. Acceptability	-				
2. Resources	.618**	-			
3. Item 12	.599**	.870**	-		
4. Item 14	.668**	.822**	.678**	-	
5. Item 17	.171	.491*	.278	.233	-

*Note. *p <.05; **p < .01.*

Relationship between Acceptability of R-CBM and Belief that R-CBM is a General Outcome Measure of Reading

The results also indicated a significant correlation between the Belief that R-CBM is a General Outcome Measure (GOM) of reading summary score and the Acceptability summary score (r_s= .634, N=22, p=.002). Specifically, there was a significant correlation between the Acceptability summary score and Item 18 of the survey (r_s=.534, N=19, p=.018). Please refer to Table 7 on the next page for a summary of these correlations.

Table 7

Summary of Intercorrelations for scores on Acceptability, Belief that R-CBM is a General Outcome Measure of Reading, Item 13, and Item 18 of the Survey

Variables	1	2	3	4
1. Acceptability	-			
2. Belief that R-CBM is a GOM of Reading	.634**	-		
3. Item 13	.398	.733**	-	
4. Item 18	.534*	.751**	.246	-

*Note. *p <.05; **p < .01.*

Relationship between Low Acceptability of R-CBM and Knowledge, Training, Resources, and Belief that R-CBM is a GOM of Reading

The current research also examined if there was a relationship between low acceptability, determined by Acceptability summary scores lower than 9 out of 15 points, and Knowledge, Training, Resources and Belief that R-CBM is a GOM of Reading. Results indicated that there was a significant correlation between both Resources and Belief that R-CBM is a GOM of reading and low overall acceptability summary scores (r_s=.735, N=14, p=.003; r_s=.709, N=14, p=.005). A summary of these correlations is located in Table 8.

Table 8

Summary of Intercorrelations for scores on Low Acceptability (Summary Score Lower than 9 points) Knowledge, Training, Resources, and Belief that R-CBM is a General Outcome Measure of Reading

Variables	1	2	3	4	5
1. Low Acceptability	-				
2. Knowledge	.275	-			
3. Training	.009	.766**	-		
4. Resources	.735**	.368	.240	-	
5. Belief that R-CBM is a GOM of reading	.709**	.163	.136	.732**	-

*Note. *p <.05; **p < .01.*

Discussion

Similar to previous research, the current study found that elementary special education teachers reported more knowledge and acceptability of R-CBM than general education teachers. Specifically, special education teachers reported knowledge on R-CBM that was statistically greater than general education teachers. This knowledge of R-CBM included knowing the measure and having a basic understanding of it. Although special education teachers reported a higher acceptability of R-CBM than general education teachers, their responses were not statistically different from each other. Overall, both groups of teachers reported similar responses regarding the acceptability of R-CBM, its usefulness in making instructional decisions, and time spent with it being beneficial.

Results of the research also indicated that there was a significant positive relationship between overall knowledge and acceptability of R-CBM. Specifically, there was a significant positive relationship between teachers' reports of having a basic understanding of R-CBM and overall acceptability. The study also examined the relationship between overall acceptability of R-CBM and training. Specifically, the researcher examined the relationships between teachers' reports of feeling properly trained to administer and interpret the results of R-CBM and their overall acceptability. Results indicated that there was no significant relationship between training and acceptability. Another relationship that was examined in the current research was teachers' acceptability of R-CBM and resources. Resources included teacher opinions on R-CBM being simple and quick to administer, not intrusive into time spent on teaching, and having the accurate materials to implement it within the classroom. Results indicated that there was a significant positive relationship between teachers' overall acceptability and resources. Specifically, there

was a positive relationship between teachers' viewing R-CBM as a simple and quick tool that is not intrusive into time spent on teaching and overall acceptability of the measure.

The relationship between teachers' overall acceptability of R-CBM and the belief that it is a general outcome measure of reading was also examined. Results indicated that when teachers felt that R-CBM was a general outcome measure of reading, their overall acceptability was positive. Specifically, when teachers viewed R-CBM as an adequate indicator of a students' overall reading competence and as being useful to use on a variety of students they reported positively regarding the overall acceptability of the measure.

Lastly, the researcher examined if there was a relationship between low acceptability of R-CBM and factors including knowledge, training, resources, and belief that it is a general outcome measure of reading. Results indicated that there was a relationship between low acceptability of R-CBM and resources. This indicates that when teachers report low opinions regarding resources they also reported low acceptability. In addition, there was a significant relationship between low acceptability and the belief that R-CBM is a general outcome measure of reading. This indicates a relationship between teachers' low opinions regarding R-CBM being used as an overall indicator of reading and low acceptability of it.

Implications for Practice

The current findings suggest noteworthy implications for practice relating to general and special education teachers' acceptability of R-CBM. Most importantly, these findings suggest that for teachers to accept R-CBM they need to understand it. This may be addressed through professional development opportunities for both general and special education teachers. Through professional development, teachers' can become educated on the potential benefits and uses of R-CBM, specifically relating to resources and the belief that it is a general outcome measure of

reading. This could include teachers being provided with information on how R-CBM is a simple and quick tool that is not intrusive into time spent on teaching. With the RtI model being implemented, teachers' responsibilities are rapidly changing. If they feel these tools are simple and quick they may be more accepting of them. In addition, teachers would benefit from being educated on the validity of R-CBM and its use as a general outcome measure of reading. The resistance to oral reading fluency being used as an overall indicator is an inhibiting factor to teachers' implementing R-CBM.

Limitations

There are several limitations to the current study that warrant acknowledgement. As previously mentioned, the total sample for the present study was 26 participants. Due to this small sample size, the results of this research may not be generalizable to the populations of general and special education teachers. In addition, of the 26 participants only three were special education teachers. This small number is not an accurate representation of special education teachers across the United States. In addition, only one male was involved in this research, which can also not be generalizable.

Related to the small sample size, another limitation of the study is the low response rate of the survey. Of the 1,000 surveys sent only 26 useable surveys were completed. The survey, which was sent through email, was sent three times. The reason for not completing the online survey could have included the participants having limited knowledge of R-CBM. If they had limited to no knowledge on R-CBM then they may have naturally not completed the survey. Lastly, the use of surveys in research also has limitations. Although there was statistical evidence of internal validity between survey items within some of the summary scores, a limitation of the current study is the overall reliability and validity of the survey. The researcher developed the

survey used with this study. Therefore, it may not be the most precise measure of general and special education teachers' acceptability of R-CBM. In addition, survey research can be subjective in nature and may not be the most accurate measure of teachers' acceptability of R-CBM.

Directions for Future Research

The current study provides evidence for conducting more research on elementary general and special education teachers' acceptability of R-CBM. As indicated, with prevention models rapidly being implemented, it important to examine teachers' opinions regarding measures that are frequently involved within the process. Further research relating to the topic may also include further examining the inhibiting factors of implementing R-CBM. In addition, it may be beneficial to research further factors that may affect teachers' acceptability of R-CBM. Some of these factors may include administrative support and legal mandates. Lastly, with prevention models being increasingly implemented at the secondary level it may be beneficial to examine secondary teachers' acceptability of R-CBM.

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Appendix A

Survey Cover Letter

Dear [FirstName] [LastName],

Purpose of the study:

This graduate thesis study is being conducted by Sarah Hinman of the School Psychology Program at Rochester Institute of Technology located in Upstate New York in order to better understand elementary education teachers' acceptability of Reading Curriculum Based Measurements (R-CBM), such as AIMSweb, DIBELS and Ed Checkup. With preventative models, such as the Response to Intervention Model (RtI), becoming increasingly implemented by schools, it is vital to research how elementary education teachers' perceive associated reading assessments. This research will further understand how both general and special elementary education teachers' perceive R-CBM and what factors may be inhibiting the use of these measures. Participants will include a national sample of 1,000 elementary education teachers. Email addresses were obtained from district websites.

What is Reading Curriculum-Based Measurement (R-CBM)?

R-CBM is a measure of reading collected by asking a child to read a passage for one minute and counting the number of words read correct (WRC).

Description of the survey procedures and approximate duration of the study:

I would greatly appreciate your completing the survey (link provided below) through the easy to use online survey system. The survey contains two parts, which include a demographic section and then questions related to the perception of R-CBM. The survey is short in duration and will take approximately 5-10 minutes to complete. Completion of the survey is voluntary and can be stopped at any time without penalties. I don't anticipate any risks related to participating in this research.

Description of how confidentiality will be assured and the limits to these assurances, if any:

Your completion of the survey (link provided below) indicates your consent to participate in this study. Please be assured that your responses will be kept anonymous. If you decide to enter your contact information in for the raffle, which is described later, your answers and your contact information will be separated to maintain anonymity. Access to the online survey system and contact information is limited to the researcher and the thesis advisor (contact information below). Once the results have been analyzed, the survey will be deleted from the online survey system and the emails containing contact information will be permanently deleted.

Anticipated benefits resulting from this study:

The potential benefits to you from participating in the study are a greater knowledge on special and general education teachers' perceptions of R-CBM and what factors may influence implementation of it. Limited studies have examined elementary teachers' perceptions of R-CBM. With this knowledge, professional development can be tailored to meet the needs of elementary education teachers, concerning R-CBM.

Incentive to participate:

After you have completed the survey, you will have the option to enter your contact information into a raffle for a $125 national spa gift card. The contact information will be compiled and a winner will be randomly selected. One winner will be selected. Once the winner has been selected, the researcher will contact the participant and to let them know that they have won. The spa gift card will then be sent to the contact information that was provided by the participant.

Contact information:
If you have any questions about this study, you can contact the person(s) below:

Ms. Sarah Hinman
School Psychology Graduate Student
Rochester Institute of Technology
snhinman@gmail.com

Dr. Suzanne Graney
Associate Professor of School Psychology
Rochester Institute of Technology
sbggsp@rit.edu

This study has been reviewed and approved by Rochester Institute of Technology's Human Subjects Research Office (HSRO). The HSRO has determined that this study meets the ethical obligations required by federal law and University policies. If you have questions or concerns regarding this study please contact either Sarah Hinman or Dr. Suzanne Graney.

I hope that you will be able to participate in this study.

Link to survey: http://www.surveymonkey.com/s.aspx

Sincerely,

Sarah Hinman

Appendix B

Demographic Questions

1. What is your gender?

Select One:
MALE
FEMALE
OTHER

2. What educational setting do you teach in?

Select One:
GENERAL EDUCATION
SPECIAL EDUCATION
OTHER (PLEASE SPECIFY_____)

3. What regional area of the United States of America do you teach in?

Select One:
NORTHEASTERN UNITED STATES (NEW ENGLAND & MID-ATLANTIC)

MIDWESTERN UNITED STATES (EAST NORTH CENTRAL & WEST NORTH CENTRAL)

WESTERN UNITED STATES (PACIFIC AND MOUNTAIN STATES)

SOUTHERN UNITED STATES (WEST SOUTH CENTRAL, EAST SOUTH CENTRAL & SOUTH ATLANTIC STATES)

4. Does your school currently implement R-CBM (DIBELS/AIMSweb)?

Select One:
YES
NO
OTHER (PLEASE SPECIFY _____)

5. Please estimate how long R-CBM (DIBELS/AIMSWEB) has been implemented within your school.

Select One:
My school has yet to implement R-CBM
My has been implementing R-CBM (DIBELS/AIMSWEB) for less than a year
My school has been implementing R-CBM (DIBELS/AIMSWEB) for 1-3 years
My school has been implementing R-CBM (DIBELS/AIMSWEB) for over 3 years

6. Please estimate how much training (in number of hours) you have had on the topic of R-CBM (DIBELS/AIMSWEB):_____

7. In your opinion, was this enough time to feel adequately trained on the topic of R-CBM (DIBELS/AIMSWEB)?

Select One:
YES
NO
OTHER (PLEASE SPECIFY _____)

Appendix C

R-CBM Survey

Please respond to the following statements based on your field experience. Rate each statement using the following scale:

1= *Strongly Disagree*
2=*Disagree*
3=*Neutral*
4=*Agree*
5= *Strongly Agree*
6=*N/A*

	Strongly Disagree	*Disagree*	*Neutral*	*Agree*	*Strongly Agree*	*N/A*
8. I have heard of R-CBM (DIBELS/AIMSWEB)	1	2	3	4	5	6
9. I feel that I have a basic understanding of R-CBM (DIBELS/AIMSWEB)	1	2	3	4	5	6
10. I like to use R-CBM (DIBELS/AIMSWEB) in my classroom	1	2	3	4	5	6
11. I feel that R-CBM (DIBELS/AIMSWEB) is useful in making instructional decisions	1	2	3	4	5	6
12. I feel R-CBM (DIBELS/AIMSWEB) is simple and quick to administer	1	2	3	4	5	6
13. I feel that R-CBM (DIBELS/AIMSWEB) is an adequate indicator of a student's overall reading competence	1	2	3	4	5	6
14. I feel that R-CBM (DIBELS/AIMSWEB) is not too intrusive into time that should be spent on teaching	1	2	3	4	5	6
15. I feel properly trained to administer R-CBM (DIBELS/AIMSWEB)	1	2	3	4	5	6
16. I feel properly trained on how to use the results from R-CBM in my teaching (DIBELS/AIMSWEB)	1	2	3	4	5	6

	Strongly Disagree	*Disagree*	*Neutral*	*Agree*	*Strongly Agree*	*N/A*
17. I have the adequate materials to implement R-CBM (DIBELS/AIMSWEB) in my classroom	1	2	3	4	5	6
18. I feel that R-CBM (DIBELS/AIMSWEB) is appropriate to use on a variety of students	1	2	3	4	5	6
19. I feel that the time spent on R-CBM (DIBELS/AIMSWEB) is beneficial and worthwhile	1	2	3	4	5	6

20. Please rank the following measurements (listed below) in the order you **prefer** to use them in your classroom. Place a "1" next to the measurement that you prefer the most, a "2" by the measurement that you prefer second, and so on.

____ Individual Achievement Measurements (WJ-III, WIAT)
____ DRA (Developmental Reading Assessment)
____ ELA (English Language Arts-Standardized State Assessment)
____ R-CBM (DIBELS/AIMSWEB)
____ Unit Tests
____ Informal Reading Inventories
____ Other: Please Describe:_____