EXAMINING THE INSTRUCTIONAL UTILITY OF CURRICULUM BASED

MEASUREMENT IN ACHIEVEMENT EVALUATIONS

By

Ashley Noble

May, 2012

Director of Dissertation: Dr. Scott Methe

Major Department: Psychology

The purpose of this study is to expand the current research on the usefulness of CBM reports in the schools. Specifically, we wanted to study the types of information included in typical achievement reports and how much teachers like and can use the typical information for picking good interventions.

The participants in the study were 80 teachers and personnel from elementary schools in rural southeastern North Carolina. Participants were given a survey packet containing a description of the study, a sample achievement report, a report utility scale, an intervention selection activity and a demographic survey. The achievement report varied on the content featured depending on group. PNRT group received a report featuring only published norm-referenced test while CBM group featured additional information through CBM measures. The report utility scale was used as a measure of teachers' satisfaction and was the primary measure of the report's differences. The intervention selection activity provided a second measure of utility as related being able to interpret and understand information in the classroom.

The study was designed to better understand how teachers prefer different types of information in reports done by school psychologists, and will help us learn how to make reports user friendly. We also want to know what information is useful to help teachers plan instruction

that is well matched to the data included in the report. The implications of this study should

include improvement in training of school psychologists to better help children through clear and

useful reports.

EXAMINING THE INSTRUCTIONAL UTILITY OF CURRICULUM BASED

MEASUREMENT IN ACHIEVEMENT EVALUATIONS

A Dissertation

Presented To the Faculty of the Department of Psychology

East Carolina University

In Partial Fulfillment of the Requirements for the Degree

Master of Arts & Certificate of Advanced Study Program in School Psychology

by

Ashley C. Noble

May, 2012

EXAMINING THE INSTRUCTIONAL UTILITY OF CURRICULUM BASED

MEASUREMENT IN ACHIEVEMENT EVALUATIONS

by

Ashley C. Noble

APPROVED BY:

DIRECTOR OF DISSERATION _____
                                          Scott Methe, Ph.D.

COMMITTEE MEMBER _____
                                          Christy M. Walcott, Ph.D.

COMMITTEE MEMBER _____
                                          Michael B. Brown, Ph.D.

INTERIM CHAIR OF THE DEPARTMENT OF PSYCHOLOGY _____
                                          Susan McCammon, Ph.D.

DEAN OF THE GRADUATE SCHOOL _____
                                          Paul Gemperline, PhD, Ph.D.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

CHAPTER I: Introduction

School psychologists spend a substantial amount of time performing assessments and writing reports based on assessment information (Brown, Holcombe, Bolen & Thomson, 2006; Hutton, Dubes, & Muir, 1992). Report types can vary from targeted skill-based or educational evaluations to lengthier psychoeducational evaluations, although the latter is more common (Bramlett, Murphy, Johnson & Wallingsford, 2002). Psychoeducational reports are necessary to inform high-stakes decisions, however, they are intended to provide information to consumers about student's current skill level and knowledge. Although psychoeducational evaluations include information about both academic skills and psychological processes, reports can vary to the degree that either is emphasized.

Despite the broad use of written assessment reports in practical settings, it is unknown if these reports provide useful information to teachers, who are often required to understand and implement instructional recommendations included in such reports. Currently, the instructional utility of written assessment reports has not been empirically evaluated (Brown-Chidsey & Steege, 2005). Reports that (a) are targeted to a referral concern, (b) include information about a student's accuracy, speed, and efficiency with an academic skill or set of academic skills, and (c) provide data quantifying the extent of the academic skill problem may be more useful to teachers when compared to reports that include a broad array of information emphasizing normative or relative performance indices such as percentile ranks and standard scores. Curriculum-based measurement (CBM) has been used successfully in psychoeducational evaluations, and offers an alternative form of assessment to published norm-referenced test (PNRT) batteries (Joyce & Wolking, 1987; Shapiro, 2004). Reports that feature CBM data allow a closer look at a student's instructional response when compared to PNRTs, which are typically designed to assess broad

areas of function but have been criticized as less relevant and more variable with regard to the

grade level their content appears to represent (Shapiro, 2004). PNRTs are also not designed to

be used formatively, and do not have corresponding alternative forms, so the information

gathered during the assessment process cannot be used to evaluate the effectiveness of the

intervention, as is done while monitoring student progress with CBM tests. Given that CBM

examines active student responding (i.e., reading aloud), the form of the data generated from

CBM tests can be used to quantify the extent to which they have attained accuracy, fluency, or

generalization. Quantifying student performance using this hierarchy, also known as the

instructional hierarchy (Ardoin & Daly, 2007), allows a direct link between assessment and

intervention. Identifying a performance level using PNRT data using relative performance

indices is more difficult, and PNRTs are not designed to facilitate quantification of performance

level on an instructional hierarchy. The current study compares two types of reports: those that

feature CBM data and those that feature norm-reference test battery data and examines the extent

to which both report types facilitate teacher instructional planning. The report type more readily

understood and used by teachers can be said to have more instructional utility (Gresham, & Witt,

1997).

When making informed decisions on a student's progress toward goals it is important to

include multiple sources of reliable information. CBM assessment data allows for identification

of current student performance and can be used to link their current level to interventions. CBM

can be a strong tool for data-based decision making in the classroom. CBM assessment can be

used to make instructional planning decisions including what to teach (Hosp & Ardoin, 2008).

What to teach is decided though identifying which skills a student has and has not yet mastered.

The ones that he or she has not yet mastered are the ones that need to be taught. This process

allows teachers to identify a student's skill level through the hierarchy of skills using different probes. Identifying the skills a student has not yet mastered allows teachers to teach base skills enabling the student to better grasp concepts that are higher on the hierarchy.

Diagnostic ability is exemplified by the Dynamic Indicators of Basic Early Literacy Skills (DIBELS), which are multipurpose tools used to both monitor progress and identify how well students employ key early literacy skills strongly related to overall success in the early literacy curriculum. Despite the utility of CBM for instructional support, traditional psychoeducational evaluations (Sattler, 2008) continue to use PNRT batteries and do not include information about student instructional response. Although both traditional formats using PNRTs and those that incorporate CBM are valid and useful for their stated purposes, it has not been documented which report would be more useful to classroom teachers and thus translate more readily into instructional planning.

Research Questions and Hypotheses

The utility rating of CBM and traditional reports can be analyzed through a teacher's ratings on a report utility scale. Teacher choice of intervention and intervention level can be analyzed through completing an intervention selection activity which would include the selection of intervention and the grade level of implementation. Therefore, this study will (1) compare teacher utility ratings of CBM report and traditional report (2) determine the influence of CBM report and traditional report on teacher's intervention selection, and (3) determine the influence of CBM report and traditional report on selecting implementation level of intervention. Based on the strong instructional utility of CBM, it is hypothesized that (1) the CBM report will be rated more useful by teachers when compared to traditional reports, (2) teachers will be able choose an intervention aligned with the child's current skill deficit based on the IH when using

information from the CBM report and (3) teachers will be able to identify the correct grade level

and they will also be able to identify the correct intervention based on the IH.

CHAPTER II: Literature Review

The current study evaluates the differences in outcomes based on types of assessment given to students in school to evaluate their current academic skills. The first report type is CBM which includes data that allows a closer look at a student's instructional response. The second report type is a PNRT which includes an overview of a student's academic progress as related to similar aged peers. When completing an academic assessment, it is important to identify specific academic weaknesses and translate the skill deficit to interventions that are indicated by the data. Identifying specific skill deficits is a process known as problem analysis (Christ, 2008), wherein assessment data are linked to and thus indicate what intervention approaches should work. When data generated from the assessment process fill this function, the conclusions made on the basis of the data are said to have instructional utility (also referred to as treatment validity; put a citation here). According to Christ (2008) and Hosp and Ardoin (2008), a useful framework for instructionally useful problem analysis is the instructional hierarchy. Ensuring that decisions are data-driven (i.e. data-based decision making) provides a basis for valid and reliable decisions used to foster the improved learning of students (Messick, 1995).The aim of this current study is to gain knowledge into what type of assessment yields a report that facilitates teacher ability to identify proper level and type of instruction. In the following sections I will review literature concerning specific topics mentioned above including CBM and PNRT assessments which yield different evaluation reports that are being examined. Also, I will examine instructional hierarchy, instructional utility and data based decision making which comprise the basic framework for selecting and implementing a targeted academic intervention.

Curriculum Based Measurement

CBM is a popular assessment tool used to facilitate data-based decision making and problem solving (Fuchs, 2004). CBM can be used in data collection, problem analysis and to measure student's academic growth. CBM is a general outcome measure of student performance in a basic skill or content knowledge (Shinn, 1989). A general outcome measure is a comprehensive assessment that describes individual growth and development over time using specific outcome variables. General outcome measures also provide a model for designing and evaluating the effectiveness of interventions that can be used for individual students or groups of students. In the classroom, CBM can be used to create curriculum goals for the student. Fundamental principles for CBM include measures that are tied to curriculum, short administration time, multiple forms, inexpensive cost and sensitive to students' achievement over time (Shinn, 1989).

CBM measures are tied to educational curriculum which provides a strong link with student's learning and achievement in the classroom. The teacher can provide measures to students that are tied directly to his or her current grade level. CBM is found to produce similar correlations to classroom assessment as published norm referenced achievement. CBM has also been found to be equally effective at identifying high risk students as published norm referenced achievement tests (Joyce & Wolking, 1987). Through its link to the curriculum, CBM also provides support for educational decision making and monitoring student achievement that published norm referenced achievement tests or informal observations does not provide including the ability to track student's progress over time. There are also multiple variations of CBM that allows educators to choose the precise measure related to area of interest.

DIBELS is a type of formative assessment similar to CBM that utilizes progress monitoring to track academic growth on targeted basic literacy skills. DIBELS can be used as a formative measure to ensure that all students achieve early reading goals through benchmark evaluations performed by the teacher in the classroom (Hoffman, Jenkins, & Dunlap, 2009). The measures also provide teachers with direct connections to the curriculum and allow for instructional modification to be made within the classroom. DIBELS measures also allow for specific-level analyses (Hosp, Hosp, & Howell, 2007) because they can identify effective interventions for at-risk learners (Coyne & Harn, 2006).

CBM is an efficient assessment tool that can be administered in a short period of time ranging from one to five minutes. The assessments can be given a variety of settings depending on the measure including group or individual administration. Given the short administration time and ability to administer in multiple formats CBM is an efficient measure of a student's academic ability. Short administration times allow data to be collected frequently without major classroom interruption or time constraints on the teacher. In addition to short administration time, CBM also provides multiple forms to assess each skill. The use of multiple forms in administering CBM allows for assessment of students' knowledge of different items within the same skill set (Shinn, 1989). Also, the inexpensive cost allows for frequent administration, thus providing educators with ongoing progress data that can be used to inform interventions (Shinn, 1989). The inexpensive cost and the time effective measures allows for CBM to be easily administered school wide or individually in a classroom. It has been found that time is a key issue for school psychologists, who report spending between 40 to 60 percent of their time engaged in assessment activities (Hutton, Dubes, & Muir, 1992). CBM provides an efficient way to assess student's educational knowledge allowing more time for school psychologists to

provide other essential services. Specifically, school psychologists report more interest in

providing interventions and professional development activities (Brown, Holcombe, Bolen &

Thomson, 2006).

CBM allows data to be gathered over time providing teachers with specific feedback

regarding student's academic level and ability, thus allowing teachers to analyze their ability

level and needs (Capizzi & Fuchs, 2005). CBM also helps teachers plan instruction based on data

received from student's CBM reports (Capizzi & Fuchs, 2005). The data from reports can be

represented using graphs and charts that are easy to interpret (Deno, 2003). This allows teachers

identify student's progress and learning. The data also help teachers make complete and suitable

goal statements for their students (Fuchs, Fuchs, & Stecker, 1989). This process makes it easy

for teachers to identify their student's treatment and progress toward their goals specifically

when compared to teachers who were using published norm referenced achievement tests.

Students who are receiving CBM are also able to recognize their goals and judge if they were

going to meet their goals better than students receiving conventional evaluation (Fuchs, Deno, &

Mirkin, 1984).

CBM measures have been found to be strong measures of student's academic ability due

to measure sensitivity that allows teachers to pinpoint a student's specific deficits. CBM data

have found to be a sensitive to variation in different test situations. The sensitivity of the measure

can be influenced by the reliability and variability of the data (Elliott & Fuchs, 1997). The

consistency of CBM is affected by the variability of the measure. CBM measures have been

shown to fluctuate in variability in the performance of students. However, there are multiple

ways to decrease the variability and dispersion of performance. First, students can be repeatedly

assessed across days with multiple form and then report performance using graphs that represent

the level of variability. Also, students can be assessed over multiple days and then report the range of performance in a numeric format providing an average score and a standard deviation (Marston, Tindal, & Deno, 1982). An additional way to assess students is to administer fewer assessments and then report the standard error of measurement. Through using these procedures one can decrease the variability in the measures. Sensitivity can also be influenced by the reliability of the measures. To ensure strong reliability across CBM measures administrators should follow standardized administration guidelines and collect three data sets across each test and report the median score. By following guidelines in place for administration and reporting CBM data the sensitivity, reliability and variability of CBM can all be controlled for by the administrator.

Evaluation Reports

A psychoeducational report is a type of psychological report that focuses on interpretation of educationally related psychological tests and educational tests (Cornwall, 1990). Psychoeducational evaluations provide estimates of the client's intellectual, or cognitive, abilities and educational achievement levels. There is a variety of evaluations that can be included in a psychoeducational evaluation ranging from formative to summative assessment of student achievement (Jackson, 1991). Recommendations are also a key component of psychoeducational evaluation reports that can provide relevant for educational planning based on assessment outcome (Lichtenstein & Fischetti, 1998).

Though the format of psychoeducational assessment reports and the information presented vary, most reports include certain basic components. The basic components of a report include background information, educational history, and data from tests of intelligence and educational achievement and, if needed, ratings tests of attention, behavior/emotions, and

adaptive behavior. Variations within psychoeducational reports include the type of assessment given which can range in academic focus and details provided on student's achievement.

Traditional Assessment Report

Variations in data through psychoeducational reports can provide a range of student reading or math ability or a snapshot of their overall academic achievement. One widely-used variation of psychoeducational report includes published norm referenced achievement tests (Sattler, 2008). These tests as mentioned above provide information about student's educational achievement. Test items that are included in standardized tests have been developed to a set of specifications and have a clearly defined relationship to individual domains. Standardized published norm referenced achievement tests also have standard directions for administering and scoring procedures which provide administrators specific directions to follow to ensure the similarity of each test (Sattler, 2008). The tests also include a norm base which is developed on national samples of students in the grades which the test is developed for use. These norms are provided as an aid in interpreting the test scores. Norms can be separated into different parts of the school year and can also be supplied for different regions, states or special populations. Standardized published norm referenced achievement tests can also provide equivalent and comparable forms of the test that may be used (Linn & Gronlund, 2000). A test manual and administration material including guidelines for administration, evaluating the technical qualities and interpreting the results can also be provided with the test. Although there are common characteristics across tests, no two tests are alike. Tests can vary on the content, objectives and skill they are designed to measure. These standardized achievement tests are the most frequent or traditional assessment given to students in schools (Gresham & Witt, 1997). There are several problems, however, when using traditional assessment (Linn & Gronlund, 2000). The results of

traditional assessment provide little information that can enable classification and placement decisions for students including proper curriculum instruction (Gresham & Witt, 1997). Various achievement tests sample the curricula used in schools but, the overlap between test items and curriculum taught is significant. Also, many special education teachers are unable to translate the results from published norm referenced achievement tests and do not find the results or recommendations they yield useful (Gerretson, Bosnick, & Schofield, 2008; Karp & Woods, 2008).

Solution-focused evaluation is a formative assessment report that can be used to provide clear results and recommendations. An outline for solution-focused evaluation report is provided by Brown-Chidsey and Steege (2005). Solution focused evaluations are based on formative-assessment data. This is in contrast to traditional reports which are summative in nature. A solution focused evaluation should be organized in a way that documents and shows how a student's needs are addressed by potential solutions. A solution focused evaluation contains three major components, identification of the problem, definition of the problem and possible solutions. The first component, identification of problem includes basic information about the student containing student information, when problem was observed and individuals who identified the problem. The second major component is define problem, this includes background information on the student, current educational placement, present levels related to achievement of peers and the difference between current performance and what is expected. The final section of a solution-focused report is the possible solutions. In the section general education interventions and special education interventions are recommended to decrease the discrepancy between the students' current performance and their expected performance. A solution-focused

report enables the reader to better identify a student's current academic level and possible solutions.

Instructional Hierarchy

The instructional hierarchy links level of academic skill development with appropriate instructional techniques. The instructional interventions have been found to produce large performance gains when using student's instructional hierarchy on subjects' oral reading performance (Daly, Lentz, & Boyer, 2010). Instructional hierarchy helps identify treatment or interventions based on level of skill development and need. Implementation of effective interventions relies on the use of assessment data to adequately describe the learning problem and offer potential solutions. The use of curriculum-based assessment and measurement when combined with the learning hierarchy has been found to support decision making based on a skill-by-treatment interaction (Burns, Codding, Boice, & Lukito, 2010).

Instruction is an important facet of a student's education in school. One aspect of instruction to consider is the development of instruction in classrooms to increase academic success among students. The instruction should be tailored to student's academic skill and ability providing an appropriate level of challenge. This is crucial to student performance, since no two students are the same. Instruction development is based on this need to tailor instruction to astudent's specific needs (Gickling & Thompson, 1985). Considering the student's academic skill level enables instruction development and promotes student achievement.

Instructional hierarchy (IH) conceptualizes student learning by acquiring new skills in stages. Breaking down skills into stages, beginning with basic foundational skills makes it more likely that a student will attain the next higher level. As a student is gaining a new skill, he or she will first acquire the skill, and then through continued practice the student will become fluent in

12

the skill. Subsequently the student will learn to generalize the new skill to novel situations, learning to modify or adapt the skill as necessary in new circumstances. Each of these individual steps along the IH is part of the learning process and a potential intervention target (Haring, Lovitt, Eaton, & Hansen, 1978). It is important to examine potential progress as it proceeds along the continuum, accuracy to fluency to generalization to adaptation.

The IH is important in considering student's ability and determining his or her functioning to provide an intervention that will best enhance learning. Also, formative evaluation materials such as CBM provide a way to student's ability along the IH by providing information on where they are academically, where they need to be and what skills can be targeted to get there. IH can be used in reading interventions at any level focusing on students' needs including accuracy, fluency or generalization. The importance of IH is that it enables teachers to directly assess student ability with data and pinpoint student needs (Ardoin & Daly, 2007).

Instructional Utility

Strong instructional utility of an assessment enables it to inform instructional plans creating a link between the assessment data and the intervention design (Hayes, Nelson, & Jarrett, 1989). The treatment utility of measures refers to the extent that they provide information that helps guide the design of interventions (Hayes, Nelson, & Jarrett, 1987; Nelson-Gray, 2003). Gresham and Witt (1997) recommend assessment measures that directly relate to the implementation, and evaluation of instructional interventions for children. This can enable teachers to implement strong interventions focused on student needs. Instructional utility can also be viewed as the validity or standards used for educational measurement. The utility of a measure should analyze the task and subtask performance providing information about the skills needed in each construct domain (Messick, 1995). Educational interventions focus on clearly

13

defining a student's needs through the IH, using formative assessment to track progress,

collecting baseline student data prior to the intervention, and setting achievable goals for student

improvement to judge if the intervention is successful (Witt, VanDerHeyden, & Gilbertson,

2004). When implementing interventions, assessment literacy and understanding is a key factor

in the interventions success. Lack of understanding concerning basic intervention aspects

including percentile rank and graphing can impede the implementation. Assessment is a

widespread feature in our educational system, therefore teachers should have assessment literacy

and be able to understand and use test results. It is estimated that teachers spend from 10% - 50%

of time on assessment-related activities (Overton, 2000). In many schools, a good portion of the

budget also goes into formal testing. With so much time and money devoted to assessment, it's

worth critically understanding assessment and how decisions are made. Teachers with

assessment literacy are better able to communicate their own classroom results with others

(Black & Wiliam, 1998).

Teachers' understanding of assessment increases their proper implementation and

satisfaction of interventions. A study researching decision-making teams found that all

individuals report participating in similar training in decision making when participating on

teams (Poland, Thurlow, Ysseldyke & Mirkin, 1982). This preparation included knowledge on

IEP preparation, legal issues, mainstreaming, and interpretation of assessment or test data.

However, this does not account for the training and understanding of assessment that teachers

implementing it hold.

The treatment utility of a construct is determined by its relation to the interventions or

treatments and the known outcomes of applying these interventions (Reschly, 1997). The

implications of outcome criterion are that judgments made about assessment instrument and

14

processes based on what occurs within the client. Outcome criteria are important in the

application to problems related to alleged bias in assessment and the value of the assessment

instruments and procedures for students. The outcome criterion focuses on what does or does not

happen following assessment. If assessment is performed and it does not result in an effective

intervention then the assessment was useless for the student. Outcome criterion implications

focus on the judgments made about the assessment instruments and the process on the basis of

what occurs with the client. When considering utility, consequential validity should also be

included (Reschly, 1997). The validity criterion for intelligence tests should be considered as the

relationship to interventions for students and the outcomes of those interventions. It has been

found that CBM measures have high utility when being translated to classroom interventions

(Reschly, 1997). Also, teachers evaluated CBM utility as high in the ability to use evaluate and

modify student instruction (Foegen, Espin, Allinder & Markell, 2001).

Data-based Decision Making

Decision-making frameworks in education help provide educators with basis for reliable

decisions and foster improved student learning (Messick, 1995). RTI framework promotes

making data-based decisions on progress monitoring as well as special education eligibility.

(Fuchs et. al, 2006). Data-based decision making is important to help educators make informed

decisions on student's progress toward goals. Burns, Scholin, Kosciolek, and Livingston (2010)

used progress monitoring to examine student's growth due to intervention. Students' growth was

measured using weekly progress monitoring data for 30 weeks. The data were examined by

comparing the growth to an aimline with a yearly goal and by computing a dual discrepancy

(DD) using numerical slope. It was determined that an aimline approach would be appropriate

for instructional decisions such as determining if the intervention is working or if a new one

should be attempted. However, the researchers recommended considering more research on RTI measures when considering special education services. This study found that using RTI based procedures were suitable for deciding if the intervention was working or if a change should be implemented.

Data-based decisions involve multiple components which range from using appropriate assessment tools to analyzing graphs. CBM has been found to be a useful data-based instrument to help teachers and administrators effectively interpret data and create adequate objectives (Codding, Skowron, & Pace, 2005). CBM has been designed to include specific procedures for administering and scoring assessments on a routine basis as well as summarizing and interpreting the data (Deno, 2003). CBM is a successful tool for data-based decisions because of its ease of use for screening identification, intervention planning, progress monitoring and evaluation decisions (Marston & Magnusson, 1985).

Educational reports are an important piece of decision making for planning student's educational plan or intervention. Reviewing the results from assessment is one of the four major steps listed by most special education directors alongside the child being referred, development of the IEP and implementation of the program (Poland, Thurlow, Ysseldyke & Mirkin, 1982). The results displayed in the reports are used to decide high stakes special education decisions as well as developing goals for student progress. Due to high stakes decisions being made incorporating results from psychological and educational reports it is important that the reports contain information that is easily understood and interpreted. CBM based reports lend to easy charting of progress and interpretation of data for teams to base decisions on.

The instructional utility of a report is key to promoting student success in the classroom. Using CBM evaluations delivers an estimate of educational achievement levels and can provide

information for intervention or educational planning. This is in contrast with traditional reports featuring PNRT which teachers were unable to translate the results or use the results in the classroom (Linn & Gronlund, 2000). CBM allows for teachers to identify correct interventions for students that align with their current skills based on the IH. This can enable teachers to select educational interventions through focusing on clearly defining a student's needs through the IH (Witt, VanDerHeyden, & Gilbertson, 2004).

In summary, CBM allows for formative assessment of students academic achievement through multiple measures. Using the multiple measurement tools allows for current achievement to be identified on the instructional hierarchy. Identifying a student's current skill base enables teachers to develop interventions that target base missing skills. Teacher assessment literacy skills enable them to analyze assessment data using IH and select proper interventions that align with skill deficits.

CHAPTER III: Method

Participants and Setting

The individuals in the study were 70 in-service elementary school teachers and school personnel including teacher assistants from North Carolina teaching the first through fifth grades. To recruit teacher participants, the researcher obtained local school board research approval then contacted local principals. The researcher explained the purpose of the study and requested time at the beginning of an after school meeting to hand out packets. The researcher attended the teacher meeting provided both verbal and written information explaining the purpose of the study. See Appendix E for an example of the informed consent given. The packet was distributed randomly to the participants and they were allowed 10- 15 minutes to complete the survey.

Participants completed the packets from two separate schools located in rural southeastern United States. Analysis revealed 34 participants were from one school and 36 participants were from the second school. The study included 65 women and 5 men. Of the 48 participants who responded to the item concerning age, 32.8% (N= 23) fell in the 21- 30 age range which was the largest group of respondents. The next largest group was the 31- 40 age range (21.5%, N= 15) followed by the 41- 50 age range (8.6%, N= 6). The age range of respondents from 51- 60 was 5.7% (N=4). A breakdown of ethnicity revealed that 52 (74.3%) of the participants were Caucasian/white, 13 (18.6%) were African American and two participants identified themselves as some other race (2.9%). The majority of participants were general education teachers (65.7%, N= 46). Additional occupations of respondents included nine special education teachers (12.9%), six teaching assistants (8.6%), seven instructional support teachers (10%) and two English language learner teachers (2.9%). The grade level taught ranged from kindergarten through fifth grade with 23% of teachers teaching multiple grade levels. Based on

responses from the demographic survey, 19 out of the 70 were board certified (27%). Participants reported that 16 (22.9%) had no contact with school psychologist, 40 (57.1%) occasionally had contact with their school psychologist and 14 (20%) had frequent contact with their school psychologist.

Instrumentation

PNRT report. The PNRT report was developed by the researcher based on current literature and report recommendations (Brown-Chidsey & Steege, 2005). The report was developed based on best practices collected by reviewing current literature on CBM including Fuchs, Fuchs, Hamlett, & Stecker (1991), Fuchs, Fuchs, Hosp, & Hamlett (2003), Deno, (2003) and Burns, Dean, & Klar (2004). The Wechsler Individual Achievement Test–Third Edition (WIAT-III) was used to build the report. The PNRT report included demographic information about the student including age, grade and gender. The report also provided information on the reason for referral, background information on the student and a list of tests administered. A brief description of the WIAT-III was provided which included a description of individual subtests and a description of the score range. The report results included student scores on the Basic Reading composite, Comprehension and Fluency composite, Written Expression composite and Math Fluency composite. The report also included scores on the individual subtests that comprised each composite. The scores were reported in a chart as well as a descriptive paragraph. Also, the readability of the report was on a twelfth grade level (Harvey, 1997). This grade level was selected to ensure that teachers will understand the content of the reports without being overwhelmed. This was accomplished through using online software to rate the oral reading fluency of each passage in the report. The software provided the Flesch index as well as the grade level of each passage. For each report the flesh index was below

19

60/100 and the grade level was below the seventh grade. See Appendix A for an example of the PNRT report that was provided to teachers.

CBM report. The outline and format of the additional information via CBM report was developed based on a review of literature from the past 10 years and current recommendations on report style (Fuchs, Fuchs, Hamlett, & Allinder, 1991, Allinder & Oats, 1997 , Christ & Coolong-Chaffin, 2007). The format for the first section of the report was identical to the PNRT report. Additional information via CBM was added to the end of the PNRT report. The CBM section included a brief description of the CBM administered as well as student's scores on the measures. The scores were presented in a chart as well as in a narrative paragraph following the chart. The readability of the report was on a twelfth grade level (Harvey, 1997). The software provided the Flesch index as well as the grade level of each passage. For each report the Flesch index was below 60/100 and the grade level was below the seventh grade. See Appendix B for an example of the CBM report that was provided to teachers.

Demographic survey. Participants completed a demographic questionnaire regarding aspects including age, gender, years of experience teaching, subjects taught and highest degree earned. The survey also asked participants about board certification, frequency of contact with the school psychologist, familiarity with curriculum-based measurement of oral reading fluency and expertise in reading or reading interventions. These variables were considered in analyzing survey responses. See Appendix C for a list of questions included in the survey.

Report utility scale. The scale is the primary dependent variable. The report utility scale provides a measure of the report's differences through teacher ratings. The teachers were asked to rate their satisfaction on a 5- point Likert scale. The measure was based on a scale used in a previous study by Pelco, Ward, Coleman and Young (2009) which used a similar scale with

20

teachers having 1 representing strongly disagree and 5 representing strongly agree. Each report question was measured coded individually as well as a total average for each participant was calculated. One question which relied on negative terminology and was reverse coded to be on an equal scale. We began developing our survey instrument by creating a list of 14 potentially important characteristics of a report that enhances utility drawn from prior research (Pelco, Ward, Coleman & Young, 2009). The list included questions regarding teachers' view of utility within the report overall as well as the utility of specific elements of the report. These items on the report utility survey are listed in Appendix D.

Intervention selection activity. Following completion of the PNRT report or the CBM report, participants read a description of two interventions and selected the best one for the sample student. The intervention selection activity included information on two different interventions. A description of each intervention included a brief description of the intervention, implementation steps and materials needed. The two interventions given were Supported/ Paired reading and "Cold-Warm-Hot"/ Repeated Reading. Supported/ Paired reading is an accuracy intervention while "Cold-Warm-Hot"/ Repeated Reading is a fluency intervention. Fiala & Sheridan (2003) found that paired reading that provided children with reading material at their instructional level showed reading accuracy and rates increased based on pre/posttesting CBM measures. Repeated reading has been found to improve students' reading fluency with students that have average to below average reading skills. Students' words read correctly per minute increased as a result of the repeated reading intervention given on their instructional level (Begeny, Krouse, Ross, & Mitchell, 2009). The participants were required to select the intervention that best suited the student. Following the intervention selection, participants were then asked to choose an appropriate grade level at which to implement the intervention, from

21

Kindergarten through Second Grade. From the choices available, there were two combined

correct intervention choices for the student, accuracy at the second grade level or fluency at the

first grade level. See Appendix F for an example of the intervention packet.

Procedure

The packet was distributed during afterschool staff meetings. The packet included a

sample report, demographic survey, report utility scale and intervention selection activity. At the

beginning of the meeting, the researcher was introduced to the staff and gave a brief description

of the objectives and aim of the study. The packet was handed out to each participant

individually. The researcher answered any participant questions individually during completion

of the packet. The participants were allowed 10-15 minutes to complete the packet. Following

the completion each packet was individually collected by the researcher.

The packet consisted of three parts, a CBM or PNRT report, demographic survey, report

utility scale and intervention selection activity. The packets were randomly assigned to teachers

as they were distributed. Each group was presented a PNRT report or a CBM report to review in

their packet. Each group received reports on the same students but the CBM report provided

additional information in a different report style.

There were two different versions of reports presented to teachers and four different

presentations of each report version. The first version contained additional information through a

CBM report. The second version contained a published norm referenced achievement report.

Following reading the report, teachers completed a questionnaire about the utility of the report

they just read. Teachers were be permitted, but not encouraged to refer to the report while

completing the questionnaire. The participants then completed an intervention selection activity.

The activity asked the teachers to choose an intervention best suited for the child and choose

their current instructional level. The participants were asked to take 10- 15 minutes to complete the intervention selection activity by reading over the academic interventions and selecting one that they believe would help the student. The intervention selection activity included multiple versions which varied in the order that the intervention selection and intervention choice was presented. The variation of the orders the intervention was presented in helped to ensure that participant's performance was not due to the order in which the intervention was presented. For example, the first version, Form A1 presented Supported/Paired reading as intervention choice one and "Cold-Warm-Hot"/Repeated Readings intervention choice two. The presentation and selection of the interventions varied in order so that "Cold-Warm-Hot"/Repeated Readings and Supported/ Paired reading were presented in different orders. The grade selection order was also randomized in that half the forms were presented the choice of Kindergarten, First Grade, Second Grade while the other half were presented the grades in reverse order. In each report type, there were four different versions that participants could receive for a total of eight versions across the control and experimental group. Following completion of the intervention selection activity, participants completed a short demographic survey. Participants were randomly assigned and equally distributed to each packet order. Upon returning the packet, the participants' were placed in a raffle for a $20 gift certificate to a local teachers aid store as an incentive for increasing teacher response. See Appendix F for a sample of the packet that was provided to teachers.

CHAPTER VI: Results

This results section focuses on results from the two primary research questions regarding report utility scale ratings and intervention choice from the intervention selection activity. The report utility scale was a primary dependent variable that asked participants to rate the report they read through 14 different related questions on report content, clarity and function. The second research focus, the intervention selection activity response, required participants to select an intervention based on the sample report from two separate interventions and choose the grade level and intervention that was instructionally appropriate. Table 2 includes the means of PNRT group and CBM group performance on the report utility scale. Table 3 includes the percent of PNRT group and CBM group who correctly identified overall correct intervention choice and the correct grade level for the student based on the report for PNRT group and CBM group.

Table 2

Mean Score on Report Utility Scale

Group	Mean	SD
PNRT group	3.63	0.60
CBM group	3.60	0.66

Table 3

Number (Percent) Correct Intervention Choice

Dependent	Treatment Condition	
Variable	PNRT group	CBM group
Correct	11 (.32)	8 (.24)
Incorrect	23 (.67)	25 (.76)

In order to examine the effect of potentially moderating variables on the two dependent variables listed above, participants were examined based on demographic variables as measured by the demographic survey. See Table 4 for a list of potential moderating variables examined. One-way ANOVAs were conducted to evaluate differences in response on the report utility scale as a result of demographic experience. One-way ANOVAs were conducted to evaluate differences in response on the report utility scale as a result of demographic experience. Using multiple ANOVAs increases the rate of Type 1 error or likelihood of Type 1 error. This means a significant result could be found but does not really exist. Therefore the level of significance was adjusted for error by dividing the alpha coefficient by the number of tests ran minus one creating a new alpha level for significance of .01.

Based on the ANOVA analysis, none of the identified variables hypothesized to affect teacher responses on the RUS were actually found to play a moderating role. There were no statistically significant differences between group means on years in current role as determined by one-way ANOVA ($F(24,41) = 0.82$, $P = .70$). There were no statistically significant differences between group means on years in current role as determined by one-way ANOVA

(F(24,41) = 0.82, P = .70). There were no statistically significant differences between report utility scale ratings on role in school as determined by one-way ANOVA (F(4,65) = 0.65, P = .63). There were no statistically significant differences between report utility scale ratings on grade level taught as determined by one-way ANOVA (F(6,59) = 0.53, P = .21). There were no statistically significant differences between report utility scale ratings on board certification as determined by one-way ANOVA (F(4,65) = 0.65, P = .63). There were no statistically significant differences between report utility scale ratings on contact with school psychologist as determined by one-way ANOVA (F(2,64) = 0.89, P = .42). There were no statistically significant differences between report utility scale ratings on experience with CBM-ORF as determined by one-way ANOVA (F(3,65) = 0.27, P = .54). There were no statistically significant differences between report utility scale ratings on experience with reading as determined by one-way ANOVA (F(1,68) = 0.07, P = .79). See Table 4 for the results.

Table 4

Report Utility Scale ANOVA

Demographic Variables

	df	F	*P*
Years in Current Role	24	0.82	0.70
Role in School	4	0.65	0.63
Grade Level Taught	6	0.53	0.21
Board Certification	68	0.03	0.49
Contact with School			
Psychologist	2	0.89	0.42
Experience with CBM-ORF	3	0.27	0.54

| Experience with Reading | 1 | 0.07 | 0.79 |

Overall intervention choice was examined to see if there were differences in selection of intervention or grade level influenced by potentially moderating variables. No potentially moderating variables were found to explain significant variance in participant's overall intervention choice. The Phi coefficient was chosen due the need to analyze the strength of association of Crosstabs when the variables are measured at nominal level. Calculating the Phi coefficient allows to see if there is a significant relationship between the two variables. For example, looking at Years in Current Role (Phi= .67, p < .025), it indicates there is no significant relationship between participant's years of experience and overall intervention choice. There were no statistically significant relationship between role in school on overall intervention choice (Phi= .25, p < .025). There were no statistically significant relationship between grade level taught on overall intervention choice as determined by crosstabulation (Phi= .25, p < .025). There were no statistically significant relationship between board certification and overall intervention choice (Phi= .18, p < .025). There were no statistically significant relationship between contact with school psychologist and overall intervention choice as determined by crosstabulation (Phi= .18, p < .025) . There were no statistically significant relationship between experience with CBM-ORF and overall intervention choice (Phi= .25, p < .025). There were no statistically significant relationship between experience with reading and overall intervention choice (Phi= .20, p < .025). See Table 5 for the results.

Overall intervention choice was broken down into two separate analysis, grade level selection and intervention selection. No potentially moderating variables were found to explain significant variance in participant's correct grade level choice.

Looking at the Years in Current Role, there is no significant relationship between participant's years of experience and grade level choice (Phi= .77, $p < .025$) in Table 6. There were no statistically significant relationship between role in school on grade level choice, (Phi= .41, $p < .025$). There were no statistically significant relationship between grade level taught on grade level choice as determined by crosstabulation (Phi= .38, $p < .025$). There were no statistically significant relationship between board certification and grade level choice (Phi= .19, $p < .025$). There were no statistically significant relationship between contact with school psychologist and grade level choice as determined by crosstabulation (Phi= .19, $p < .025$). There were no statistically significant relationship between experience with CBM-ORF and grade level choice (Phi= .40, $p < .025$). There were no statistically significant relationship between experience with reading and grade level choice (Phi= .56, $p < .025$).. See Table 6 for the results.

There were also no moderating variables found to explain significant variance in participant's correct intervention choice. Looking at Table 7 for Years in Current Role, there is no significant relationship between participant's years of experience and intervention choice (Phi= .51, p < .025). There were no statistically significant relationship between role in school on correct intervention choice (Phi= .28, $p < .025$). There were no statistically significant relationship between grade level taught on intervention choice as determined by crosstabulation (Phi= .42, $p < .025$). There were no statistically significant relationship between board certification and intervention choice (Phi= .12, $p < .025$). There were no statistically significant relationship between contact with school psychologist and intervention choice as determined by cross-tabulation (Phi= .19, $p < .025$). There were no statistically significant relationship between experience with CBM-ORF and intervention choice (Phi= .08, $p < .025$).. There were no

statistically significant relationship between experience with reading and intervention choice
(Phi= .22, $p < .025$). See Table 7 for the results.

Table 5

Correct Choice Crosstabulation

Comparison	Phi	*p* value
Years in Current Role	0.67	
Role in School	0.25	0.37
Grade Level Taught	0.25	0.67
Board Certification	0.18	0.15
Contact with School Psychologist	0.18	0.34
Experience with CBM-ORF	0.25	0.25
Experience with Reading	0.20	0.11

Table 6

Grade Level Crosstabulation

Phi		*p* value
Years in Current Role	0.77	0.86
Role in School	0.41	0.19
Grade Level Taught	0.38	0.69
Board Certification	0.19	0.30
Contact with School Psychologist	0.20	0.63

Experience with CBM-ORF	0.31	0.37
Experience with Reading	0.56	0.90

Table 7

Correct Intervention Choice Crosstabulation

Phi		*p* value
Years in Current Role	0.51	0.88
Role in School	0.28	0.27
Grade Level Taught	0.42	0.90
Board Certification	0.12	0.32
Contact with School Psychologist	0.19	0.31
Experience with CBM-ORF	0.08	0.94
Experience with Reading	0.22	0.86

Research Question 1: Report Utility Scale Analyses

Assuming interval-level measurement (i.e., each item was assigned a score of 1 to 5), scores from the fourteen Likert-type satisfaction questions were summed and averaged to arrive at a total score for each participant. See Appendix D for a list of questions included in the scale. An independent sample t-test was conducted to evaluate the group ratings on the report utility scale. The test was not significant $t(68) = .21$. Participants in PNRT group (M= 3.63, SD= .59) provided similar scores as participants in CBM group (M= 3.60, SD= .66). The 95% confidence interval for the difference in means ranged from -.27 to .33.

Research Questions 2 and 3: Intervention Choice Analysis

  Combined Intervention Selection. The intervention selection activity required

participants to select an intervention for the target student based on two parts. The first part

asked participants to select an appropriate intervention from two choices while the second part

asked participants to select an appropriate grade (curriculum) level from a choice of three grade

levels. Combined correct intervention choice was calculated by determining if the participant

made the correct intervention selection as well as the correct grade level for implementation.

From the choices available, there were two combined correct intervention choices for the

student, accuracy at the second grade level or fluency at the first grade level.

  A contingency table analysis was conducted to evaluate significance of overall correct

intervention choice in both PNRT group and CBM group. The variables were the report type

received (PNRT group and CBM group) and overall intervention selection (correct and

incorrect). In PNRT group, 11 made the correct intervention choice and 23 made the incorrect

intervention choice.   In CBM group, 8 individuals made the correct intervention choice and 25

individuals made the incorrect. Report type and combined correct intervention selection were not

found to be significantly related, Pearson x^2 (1, N=67, p =.46) = 0.54.   The results reveal that

only 19 teachers made the correct combined intervention choice and 48 teachers made the

incorrect combined intervention choice. Therefore, when examining difference between PNRT

group and CBM group, the report received did not influence correct choice of intervention.

  Grade Level Selection Alone. A contingency table analysis was conducted to evaluate

significance of grade level selection individually in relationship to report type received. The

variables were the report type received (PNRT group and CBM group) and the grade level

selection (Kindergarten, First grade and Second grade). Based on the instructional hierarchy, first

grade was identified as the correct grade level for implementation of the intervention based on the data provided in the sample report. As discussed in the literature review, identifying a student's current skill in the instructional hierarchy is important for development of proper interventions that focus on a student's deficits (Witt, VanDerHeyden, & Gilbertson, 2004). In review of PNRT group, one participant chose the kindergarten grade level, 16 chose the first grade and 17 chose the second grade level intervention. The analysis revealed that one participant in CBM group chose Kindergarten grade level implementation, 28 participants chose First grade and four chose second grade. See Figure 1 below for a visual representation of the group's performance.

The CBM report helped those in CBM group choose the correct grade level at a significantly higher rate than those in Group1. The analysis was significant, Pearson x^2 (2, N=67, $p =.411) = 0.004$.   Participants in CBM group chose the correct grade level for the intervention significantly more often than participants in PNRT group

Figure 1

Participant's Grade Level Selection
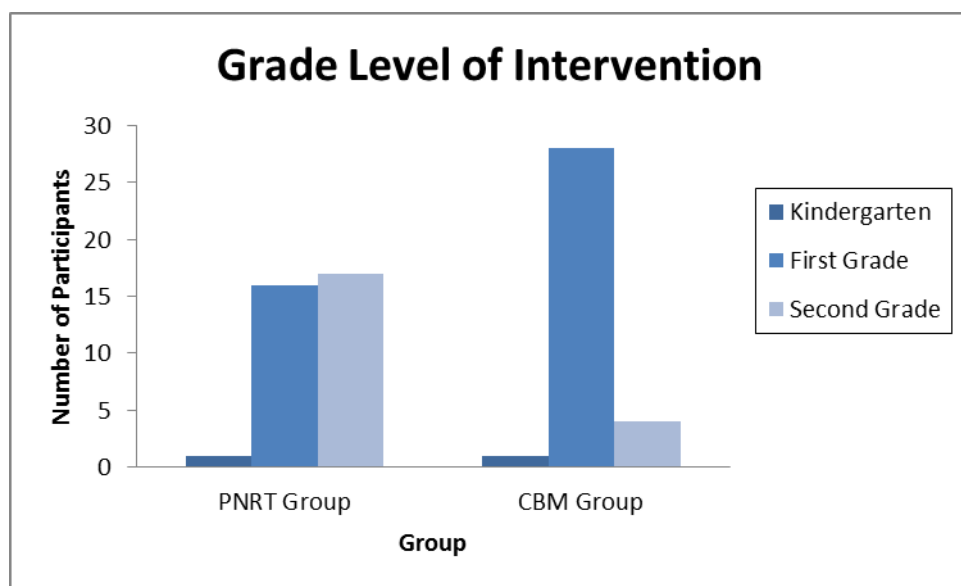
Intervention Selection Alone. A one way ANOVA was conducted to evaluate whether or not the participants chose correctly based on intervention type (selected accuracy versus fluency). Intervention type was isolated to examine if report received assisted participants to recognize student's deficits. The independent variable was the type of report received (PNRT group and CBM group) and the dependent variable was the intervention selection (accuracy and fluency intervention). In review of PNRT group, 24 chose the accuracy intervention and 10 chose the fluency intervention. The analysis revealed that 27 participants in CBM group chose the accuracy intervention and six chose the fluency. The correct intervention choice without regard to grade level was accuracy. In review of both groups' responses more participants chose the accuracy intervention. However there were no differences between groups. The analysis was not significant, Pearson x^2 (1, N=67, $p = .312$) = 0.281. There were no significant differences between groups and the CBM report appeared not to assist participants in correctly choosing an intervention above the report featuring PNRT.

CHAPTER V: Discussion

Summary

The goal of this study was to provide insight on how teachers interpret written achievement reports featuring CBM compared to traditional reports featuring PNRT. This goal was achieved through a group survey of teachers requiring them to read a psychoeducational evaluation. The hypotheses of the study were that written achievement reports featuring CBM will be rated more useful by teachers when compared to traditional reports and when using information from CBM reports teachers will choose intervention responses that are better aligned with the nature of the student's problem, using logic from the instructional hierarchy (Ardoin & Daly, 2007).

The results from this study garnered partial support for the hypothesis and showed teachers who were exposed to CBM correctly chose the curriculum level more readily than those in the control group. With regard to the first hypothesis that the CBM report will be rated more useful by teachers when compared to traditional reports,t there were no significant differences were found between PNRT group and CBM group for report utility scale ratings. One reason why CBM group did not show an advantage on the overall satisfaction on utility scale ratings is that the two report styles were too similar to provide noticeable difference in ratings. CBM group received a written report that provided CBM as supplemental information to a report featuring traditional PNRT. Providing multiple measurement types on CBM group report increased the size and complexity of the report making which may have made it more difficult for the teacher to read and interpret. Simplifying the CBM group report to only feature the CBM measure would highlight the data presented and enable teachers to interpret and identify goals for the student. CBM has been found to provide teachers with an objective and quick way to identify low-

progress readers (Madelaine & Wheldall, 2005). Pinpointing the correct intervention and selecting a grade level are the first steps to creating suitable goal statements and progress in a classroom. CBM has been found to help them track a student's progress in the classroom which includes identifying their student's treatment and progress toward goals through interventions (Fuchs, Fuchs, & Stecker, 1989 & Fuchs, Fuchs, & Stecker, 1989). Based on these results CBM should enable teachers to identify proper overall intervention choice including grade level and intervention when data is highlighted through a concise format.

The information provided to CBM group contained a PNRT report supplemented with CBM in both reading and math. The CBM report did not focus directly on the deficit of concern instead providing teachers with an array of information to read and process. Although the reports designed for the current study were done so as to look more like full reports, this study should have been designed to isolate the specific reading issues of concern. As mentioned above, the treatment CBM report featured results from PNRT and CBM measures which provided similar information in different formats. Providing multiple sources of information may have caused difficulty in distinguishing which data to interpret. It has been found in previous studies that the data from CBM reports are presented in a way that is easy to interpret without explanation (Deno, 2003), however with additional information through PNRT it may have been more difficult to interpret.

The data collected did not support the second hypothesis that teachers will choose intervention responses that are better aligned with the child's problems when using information from CBM reports. The CBM group was able choose the correct grade level more frequently than the control group. This demonstrates that information presented in a CBM report does highlight instructional level allowing teachers to select the correct grade level. Previous research

35

has found that CBM measures support a teacher's ability to understand data. Specifically, they enhance teacher instructional planning which can include intervention and lesson creation (Deno, 2003). Being able to identify a student's instructional level is a key factor in instructional planning and development of interventions. Participant's ability to select the correct grade level highlights that CBM reports deliver numerical data through using tables, graphs and charts in a way that is easy to interpret without explanation (Deno, 2003).

The third hypothesis was that teachers will be able to identify the correct grade level and they will also be able to identify the correct intervention based on the IH. The intervention selection included three separate variables: overall correct intervention, grade level choice and intervention selection. There was no difference in the selection of the correct intervention between groups. Taken together with the finding that there was no difference between groups for overall intervention selection, participants were not capable of analyzing the instructional hierarchy using the information presented in the CBM report. One reason for this may be the complex analysis required by participants to identify the student's deficit and apply that knowledge to selecting a correct intervention. The teacher must understand the function of the intervention to properly align it to the student's deficit. The intervention provider, which in this study was the teacher, would be enabled to match the nature of the skill deficit to the correct intervention (Burns, Scholin, Kosciolek, & Livingston, 2010). This is important because research has shown that identifying where students are on the instructional hierarchy provides an effective intervention (Ardoin & Daly, 2007). CBM has been found as a way to link instructional ability to assessment through using the instructional hierarchy (Daly, Lentz, & Boyer, 1996). The instructional hierarchy first emphasizes accuracy acquisition through modeling and error correction, followed by fluency acquisition through frequent and repeated opportunities to

36

respond. The model highlights multiple steps that must occur before a student has mastered a skill including acquiring the skill, fluently using the skill, learning how to generalize the skill in novel contexts, and being able to adapt knowledge as necessary. Instructional hierarchy pinpoints specific academic procedures that are appropriate for the current level of academic responding. This is a complex process since each level of responding has individual procedures that will lead most efficiently to mastery at that level. Given the amount of time taken to complete the survey teachers may have been unable to process the complex task of using the instructional hierarchy to identify student's current level using CBM measures.

CBM presents information in a way that is easily understood and has been demonstrated to be a valid and reliable measurement system that aides teacher decisions regarding student placement, progress, and intervention effectiveness (Marston, Tindal, & Deno, 1982). However, the complex analysis of interpreting the data is based on teacher's knowledge and experience. Current research on elementary school teachers has shown that the majority of teachers are not using CBM in the classroom currently (Swain & Allinder, 2011). Pre-service teacher education does not consistently provide knowledge of intervention materials or the opportunity to practice intervention implementation with supportive feedback (Vaughn, Moody and Schumm, 1998). Teacher's lack of extensive training in CBM and instructional hierarchy may contribute to the observed failure to analyze the complex task of correct intervention choice.

Limitations

One limitation to the methodology was the construction of the reports and survey materials created packets that required a substantial amount of the teacher's time and were lengthy to read. The entire packet took approximately 15 minutes to read and complete. This may not have allowed adequate time for participants to read and comprehend the information

before having to complete the activities. One potential solution to this issue is to shorten the sample reports and focus more on one specific problem. Therefore decreasing the overall time it takes participants to read the report and enabling participants to spend quality understanding each activity in the packet. The focus the report content could feature specifically reading. Reading should be highlighted because it appears as if both science and practice has advanced to a stage where much is known about this subject. It has been found that a significant amount of research in the field has been geared toward reading development and understanding (Methe et al., 2011) it would be most beneficial to focus on the subject we currently know most about. Despite this limitation, participants in CBM group chose the correct curriculum (grade) level at significantly higher rates.

A second limitation to the methodology was the development of the CBM report for the experimental group. The CBM report provided participants information on both CBM-ORF and M- CBM which provided a sample of the student's performance. However, this information gave participants additional unnecessary information to read and analyze that did not address the presenting concern. This information may have clouded the purpose of the report. Removing the M-CBM scores from the CBM report would allow the report to be more concise, highlighting the student's areas of difficulty. Enhancing the differences between the sample reports might lead to a better experiment through isolating CBM reports as the treatment variable. Additionally, a 3-group design or 4-group design could be developed to enhance the differences between the sample reports specifically including a report featuring CBM, a report featuring PNRT, a combined report with both measures and a unrelated report (to rule out chance). Developing a multiple group design would control the amount of information presented in each report. The main variables of comparison would still be the two report types, CBM and PNRT. As

previously mentioned, CBM has been found to enable teachers in decision making through data presented using tables, graphs and charts in a way teachers can identify student placement, progress, and intervention effectiveness (Marston, Tindal, & Deno, 1982; Deno, 2003). Contrasting this, reports featuring the use of PNRT typically only provide summary of the data numerically and do not feature easily interpretable data (Brown-Chidsey & Steege, 2005).

Future research

Future researchers could examine the differences between groups when provided training in using the instructional hierarchy to facilitate instructional choice. Specifically, a control group design could be used to evaluate this concern, where one group receives training while a control group does not. Following the training, both groups could be given an evaluation report and be asked to choose the correct intervention for a sample student. This type of design would be more directly geared at addressing whether or not knowledge of the instructional hierarchy would facilitate intervention choice.

Conclusion

This study revealed that CBM reports enabled teachers to select correct grade level. However, the CBM report was not able to help teachers with the more complex task of problem analysis. These findings are important because they show that the notion of appropriate grade level of material is appealing to teachers and that they are able to identify it given appropriate information.   One implication from the study is that reports featuring CBM can be useful for teachers when choosing the appropriate level of activities for children in the classroom. However, more research on the content of CBM reports is needed to develop precise type of report that would facilitate teachers to identify complex analysis of correct activities and

interventions for students. Overall, the results gave insight into the complexity of intervention development and selection of activities.

References

Allinder, R., & Oats, R. (1997). Effects of acceptability on teachers' implementation of curriculum-based measurement and student achievement in mathematics computation. *Remedial and Special Education*, *18*(2).

Ardoin, S. P., & Daly, E. (2007). Introduction to the Special Series: Close Encounters of the Instructional Kind--How the Instructional Hierarchy is Shaping Instructional Research 30 Years Later. Journal of Behavioral Education, 16(1), 1-6.

Begeny, J. C., Krouse, H. E., Ross, S. G., & Mitchell, R. (2009). Increasing elementary-aged students' reading fluency with small-group interventions: A comparison of repeated reading, listening passage preview, and listening only strategies. Journal Of Behavioral Education, 18(3), 211-228.

Bergan, J. R. (1995). Evolution of a problem-solving model of consultation. Journal of Educational and Psychological Consultation, 6(2), 111-123.

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. Assessment in Education: Principles, Policy, and Practice, 5(1), 7–73.

Bramlett, R. K., Murphy, J. J., Johnson, J., & Wallingsford, L. (2002). Contemporary practices in school psychology: A national survey of roles and referral problems. Psychology in the Schools, 39, 327–335.

Brown, M., Holcombe, D., Bolen, L., & Thomson, W. (2006). Role Function and Job Satisfaction of School Psychologists Practicing in an Expanded Role Model. *Psychological Reports*, *98*(2), 486-496.

Brown-Chidsey and Steege (2005). *Solution- Focused Psychoeducational Reports.* In R. Brown-
Chidsey (Eds.), *Assessment for Intervention: A Problem- Solving Approach.* New York:
Guilford Press.

Burns, M. K., Scholin, S. E., Kosciolek, S., & Livingston, J. (2010). Reliability of decision-
making frameworks for response to intervention for reading. Journal of
Psychoeducational Assessment, 28(2), 102-114.

Burns, M. K., Codding, R. S., Boice, C. H., & Lukito, G. (2010). Meta-analysis of acquisition
and fluency math interventions with instructional and frustration level skills: Evidence
for a skill by treatment interaction.School Psychology Review, 39, 69-83.

Burns, M. K., Dean, V. J., & Klar, S. (2004). Using curriculum-based assessment in the
responsiveness to intervention diagnostic model for learning disabilities. Assessment for
Effective Intervention, 29 (3), 47-56.

Capizzi, A., & Fuchs, L. (2005). Effects of Curriculum-Based Measurement With and Without
Diagnostic Feedback on Teacher Planning. *Remedial and Special Education*, *26*(3), 159-
174.

Codding, R. S., Skowron, J., & Pace, G. M. (2005). Back to Basics: Training Teachers to
Interpret Curriculum-Based Measurement Data and Create Observable and Measurable
Objectives. Behavioral Interventions, 20(3), 165-176.

Christ, T. (2008). Best practices in problem analysis. In A. Thomas & J. Grimes (Eds.), Best
practices in school psychology V (pp. 159-176). Bethesda, MD: National Association of
School Psychologists.

Christ, T. J. & Coolong-Chaffin M. (2007). *Interpretations of Curriculum-Based Measuerment Outcomes: Standard Error and Confidence Intervals.* NASP School Psychology Forum: Research in Practice, 1(2), 75-86.

Cornwall, A. (1990). Social validation of psychoeducational assessment reports. Journal Of Learning Disabilities, 23(7), 413-416.

Daly, E., Lentz, F. r., & Boyer, J. (1996). The Instructional Hierarchy: A conceptual model for understanding the effective components of reading interventions. School Psychology Quarterly, 11(4), 369-386.

Deno, S.L. (1985). Curriculum-based measurement: The emerging alternative. *Exceptional Children*, 52(3), 219–32

Deno, S. L. (2003). Developments in curriculum-based measurement. *Journal of Special Education, 37*(3), 184-192.

Deno, S. L. (2003). Curriculum-Based Measures: Development and Perspectives. Assessment For Effective Intervention, 28(3-4), 3-12.

Elliott, S. N., & Fuchs, L. S. (1997). The utility of curriculum-based measurement and performance assessment as alternatives to traditional intelligence and achievement tests. School Psychology Review, 26(2), 224-233.

Fiala, C. L., & Sheridan, S. M. (2003). Parent Involvement and Reading: Using Curriculum-Based Measurement to Assess the Effects of Paired Reading. Psychology In The Schools, 40(6), 613-626.

Foegen, A., Espin, C., Allinder, R., & Markell, M. (2001). Translating research into practice: Preservice teachers' beliefs about curriculum-based measurement. *The Journal of Special*

Education, *34*(4), 226-236Linn, R. L., Gronlund, N. E. (2000). *Measurement and Assessment in Teaching: Eighth Edition.* Upper Saddle River, NJ: Prentice Hall.

Fuchs, L. S. (2004). The past, present, and future of curriculum-based measurement research. School Psychology Review, 33, 188–192.

Fuchs, L. S., Fuchs, D., Hosp, M. K., & Hamlett, C. L. (2003). The potential for diagnostic analysis within curriculum-based measurement. Assessment for Effective Intervention, 28(3), 13-22.

Fuchs, L. S., Fuchs, D., Hamlett, C. L., & Stecker, P. M. (1991). Effects of curriculum-based measurement and consultation on teacher planning and student achievement in mathematics operations. American Educational Research Journal, 28, 617-641.

Fuchs, L., Fuchs, D., Hamlett, C., & Allinder, R. (1991). Effects of expert system advice within curriculum-based measurement on teacher planning and student achievement in spelling. *School Psychology Review*, *20*(1), 49-66.

Fuchs, L., Fuchs, D., & Stecker, P. (1989). Effects of curriculum-based measurement on teachers' instructional planning. *Journal of Learning Disabilities*, *22*(1), 51-59.

Fuchs, L. S., Deno, S. L., & Mirkin, P. K. (1984). The effects of frequent curriculum-based measurement and evaluation on pedagogy, student achievement, and student awareness of learning. *American Educational Research Journal, 21*(2), 449-460.

Gerretson, H., Bosnick, J., & Schofield, K. (2008). A Case for Content Specialists as the Elementary Classroom Teacher. *Teacher Educator*, *43*(4), 302-314.

Gickling, E. E., & Thompson, V. P. (1985). A personal view of curriculum-based assessment. Exceptional Children, 52, 205-218.

Gresham, F. M., & Witt, J. C. (1997). Utility of intelligence tests for treatment planning,

  classification, and placement decisions: Recent empirical findings and future directions.

  School Psychology Quarterly, Vol 12(3), 249-267

Haring, N.G., Lovitt, T.C., Eaton, M.D., & Hansen, C.L. (1978). The fourth R: Research in the

  classroom. Columbus, OH: Charles E. Merrill Publishing.

Harvey, V. S. (1997). Improving readability of psychological reports. *Professional Psychology:*

  Research and Practice, 28(3), 271-274.

Hayes, S.C., Nelson, R.O., Jarrett, R.B. (1987). The treatment utility of assessment: A functional

  approach to evaluating assessment quality. American Psychologist, 42, 963-974.

Hoy, M., & Retish, P. (1984). A comparison of two types of assessment reports. *Exceptional*

  Children, *51*(3), 225-229.

Hutton, J., Dubes, R., & Muir, S. (1992). Assessment practices of school psychologists: Ten years

  later. *School Psychology Review*, *21*(2), 271-284.

Jackson, J. E. (1991). The use of psychoeducational evaluations in the clinical process: Therapists

  as sympathetic advocates. Child & Adolescent Social Work Journal, 8(6), 473-487.

Joyce, B., & Wolking, W. (1987). Standardized tests and timed curriculum-based assessments: A

  comparison of two methods for screening high-risk students. *Journal of*

  Psychoeducational Assessment, *5*(3).

Lichtenstein, R., & Fischetti, B. A. (1998). How long does a psychoeducational evaluation take?

  An urban Connecticut study. Professional Psychology: Research And Practice, 29(2),

  144-148.

Linn, R. & Gronlund, N. (2000) *Measurement and Assessment in Teaching.* American

  Psychological Association. Upper Saddle River, NJ: Prentice Hall

MacDonald, P. (2010). Paired reading: A structured approach to raising attainment in literacy.

    Support For Learning, 25(1), 15-23.

Madelaine, A., & Wheldall, K. (2005). Identifying Low-progress Readers: Comparing teacher

    judgment with a curriculum-based measurement procedure. International Journal of

    Disability, Development and Education, 52(1), 33-42.

Marston, D., Tindal, G., & Deno, S. L. (1982). Predictive efficiency of direct, repeated

    measurement: An analysis of cost and accuracy in classification (Research Report No.

    104). Minneapolis: University of Minnesota, Institute for Research on Learning

    Disabilities.

Marston, D., & Magnusson, D. (1985). Implementing curriculum-based measurement in special

    and regular education settings. Exceptional Children, 52(3), 266-276.

Methe, S.A., Hojnoski, R., Clarke, B., Owens, B.B., Lilley, P.K., Politylo, B.C….Marcotte, A.M.

    (2011). Innovations and future directions for early numeracy curriculum-based

    measurement: Commentary on the Special Series. Assessment for Effective Intervention.

    36, 200-209.

Nelson-Gray, R.O. (2003). Treatment utility of psychological assessment. Psychological

    Assessment, 15, 521-531.

Pearson Education Inc. (2008). Aims Web Norms Retrieved from www.aimsweb.com.

Pelco, L. E., Ward, S. B., Coleman, L., & Young, J. (2009). Teacher ratings of three

    psychological report styles. *Training and Education in Professional Psychology, 3*(1), 19-

    27.

Poland, S. F., Thurlow, M. L., Ysseldyke, J. E., & Mirkin, P. K. (1982). Current

    psychoeducational assessment and decision-making practices as reported by directors of

    special education. Journal of School Psychology, 20(3), 171-179.

Overton, T. (2000). Assessment in special education: An applied approach,

    3rd ed. Upper Saddle River, NJ: Prentice Hall.

Reschly, D. J. (1997). *Diagnostic and Treatment Utility of Intelligence Tests.* In D.P. Flanagan,

    J. L. Genshaft & P. L. Harrison (Eds.), *Contemporary Intellectual Assessment: Theories,*

    tests, and issues. New York: The Guilford Press.

Riley-Tillman, T.(2010). *Evidence Based Intervention Network.* Retrieved from

    http://www.ecu.edu/cs-cas/psyc/rileytillmant/EBI-Network-Homepage.cfm

Sattler. J M. (2008). *Assessment of Children: Cognitive Foundations Fifth Edition.* San Diego:

    Jerome M. Sattler, Publisher, Inc.

Smith, D. (1984). Practicing school psychologists: Their characteristics, activities, and

    populations served. *Professional Psychology: Research and Practice*, *15*(6), 798-810.

Shapiro, E.S. (2004). Academic Skills Problems: Direct Assessment and Intervention. New

    York: Guilford Press.

Shinn, M. (1989). *Curriculum-based measurement: Assessing special children*. New York:

    Guilford Press.

Witt, J. C., VanDerHeyden, A. M., & Gilbertson, D. (2004). Troubleshooting behavioral

    interventions. A systematic process for finding and eliminating problems. School

    Psychology Review, 33, 363-383.

ACHIEVEMENT EVALUATION REPORT

Name: Joseph Student

Date of Birth: December 16, 2002

Chronological Age: 8 years 3 months

Grade: Second Grade

School: Greenville Elementary School

Examiner: Susan Examiner

Reason for Referral

Joseph was referred by his classroom teacher due to academic difficulties in the classroom. He has been struggling to complete his classwork including individual worksheets and homework in both math and reading.

Background Information

Joseph is an 8-year-old boy in the second grade at Greenville Elementary School. Joseph lives at home with his parents and two siblings. Joseph has had problems completing his schoolwork for almost two years. Medical screenings have revealed normal vision and hearing perceptions. Classroom-based assessments and observations report that he was attentive and engaged during classroom activities.

Behavioral Observations During Testing

During testing, Joseph was attentive to directions and cooperated with the examiner. His conversation level was typical for his age, and he promptly answered questions. His level of activity during testing was normal and he seemed at ease and comfortable during testing. Overall, testing conditions and his behavior during testing suggest that the following scores are reliable and valid estimates of Joseph's current cognitive and classroom functioning.

Evaluation(s) Administered

- *Wechsler Individual Achievement Test – Third Edition* (WIAT-III)

Other Sources of Data Included in Report
- *Review of Records / Summary of Existing Data*
- *Observations*

Wechsler Individual Achievement Test–Third Edition (WIAT–III)

The WIAT-III is an individually administered test of achievement that determines levels of academic performance across different domains such as reading and math. Joseph was administered 10 subtests to measure his current levels of achievement.

Table 1. Subtest Descriptions

Word Reading	Joseph was presented with a word, and asked to read it aloud. Each word becomes increasingly difficult as the test progresses.
Pseudoword Decoding	Joseph was presented with a nonsense word (e.g., vob), and asked to read it aloud. Each word becomes increasingly difficult.
Reading Comprehension	Joseph was asked to read passages and answer questions about them while the passage remained available.
Oral Reading Fluency	The subtest required Joseph to read passages aloud and then respond to comprehension questions.
Math Fluency	Joseph solved written addition, subtraction, and multiplication problems given a 60-s time limit. Three subtests were given.
Sentence Composition	Joseph was asked to combine information from two sentences into single sentences, and to write sentences using specific words.
Essay Composition	Joseph was given 10 minutes to write a story about an age-appropriate topic.
Spelling	This subtest required Joseph to write single words that were dictated to him using the context of a sentence.

The **Basic Reading** composite combines Word Reading and Pseudoword Decoding scores. The **Comprehension and Fluency** composite combines Reading Comprehension and Oral Reading Fluency scores. The **Written Expression** composite combines spelling, sentence composition, and essay composition scores. The **Math Fluency** composite includes scores from each subtest.

Table 2. Joseph's Composite Scores

Composite	Standard Score	95% Confidence Interval	Percentile Rank	Qualitative Description
Basic Reading	71	67- 75	3	Below Average
Comprehension and Fluency	79	72- 86	8	Below Average
Written Expression	74	67- 81	4	Below Average
Math Fluency	79	72- 86	8	Below Average

Table 3. Joseph's Subtest Scores

Subtest	Standard Score	95% Confidence Interval	Percentile Rank
Word Reading	72	67–77	3
Pseudoword Decoding	70	65–75	2
Reading Comprehension	80	70–90	9
Oral Reading Fluency	87	79–95	19
Math Fluency- Addition	83	70–96	13
Math Fluency- Subtraction	74	64–84	4
Math Fluency- Multiplication	84	75–93	14
Sentence Composition	72	60–84	3
Essay Composition	83	73–93	13
Spelling	79	72–86	8

On the **Basic Reading** composite, Joseph's score of 71 was below average, indicating that Joseph performed equal to or higher than three percent of similar aged students. Joseph's **Comprehension and Fluency** composite of 79 fell in the *below average* range, which is equal to or better than 8 percent of similar aged students. Joseph's **Written Expression** composite also is low, suggesting that he may struggle on tasks requiring sentencing, syntax, and spontaneous writing and spelling. Joseph's **Math Fluency** score is below average at the 8th percentile.

ACHIEVEMENT EVALUATION REPORT

Name: Joseph Student

Date of Birth: December 16, 2002

Chronological Age: 8 years 3 months

Grade: Second Grade

School: Greenville Elementary School

Examiner: Susan Examiner

Reason for Referral

Joseph was referred by his classroom teacher due to academic difficulties in the classroom. He has been struggling to complete his classwork including individual worksheets and homework in both math and reading.

Background Information

Joseph is an 8-year-old boy in the second grade at Greenville Elementary School. Joseph lives at home with his parents and two siblings. Joseph has had problems completing his schoolwork for almost two years. Medical screenings have revealed normal vision and hearing perceptions. Classroom-based assessments and observations report that he was attentive and engaged during classroom activities.

Behavioral Observations During Testing

During testing, Joseph was attentive to directions and cooperated with the examiner. His conversation level was typical for his age, and he promptly answered questions. His level of activity during testing was normal and he seemed at ease and comfortable during testing. Overall, testing conditions and his behavior during testing suggest that the following scores are reliable and valid estimates of Joseph's current cognitive and classroom functioning.

Evaluation(s) Administered

- *Wechsler Individual Achievement Test – Third Edition* (WIAT-III)
- *Curriculum-Based Measurement of Oral Reading Fluency* (CBM-ORF)
- *Curriculum-Based Measurement of Mathematics Computation* (M-CBM)

Other Sources of Data Included in Report

- *Review of Records / Summary of Existing Data*
- *Observations*

Wechsler Individual Achievement Test–Third Edition (WIAT–III)

The WIAT-III is an individually administered test of achievement that determines levels of academic performance across different domains such as reading and math. Joseph was administered 10 subtests to measure his current levels of achievement.

Table 1. Subtest Descriptions

Word Reading	Joseph was presented with a word, and asked to read it aloud. Each word becomes increasingly difficult as the test progresses.
Pseudoword Decoding	Joseph was presented with a nonsense word (e.g., vob), and asked to read it aloud. Each word becomes increasingly difficult.
Reading Comprehension	Joseph was asked to read passages and answer questions about them while the passage remained available.
Oral Reading Fluency	The subtest required Joseph to read passages aloud and then respond to comprehension questions.
Math Fluency	Joseph solved written addition, subtraction, and multiplication problems given a 60-s time limit. Three subtests were given.
Sentence Composition	Joseph was asked to combine information from two sentences into single sentences, and to write sentences using specific words.
Essay Composition	Joseph was given 10 minutes to write a story about an age-appropriate topic.
Spelling	This subtest required Joseph to write single words that were dictated to him using the context of a sentence.

The **Basic Reading** composite combines Word Reading and Pseudoword Decoding scores. The **Comprehension and Fluency** composite combines Reading Comprehension and Oral Reading Fluency scores. The **Written Expression** composite combines spelling, sentence composition, and essay composition scores. The **Math Fluency** composite includes scores from each subtest.

Table 2. Joseph's Composite Scores

Composite	Standard Score	95% Confidence Interval	Percentile Rank	Qualitative Description
Basic Reading	71	67- 75	3	Below Average
Comprehension and Fluency	79	72- 86	8	Below Average
Written Expression	74	67- 81	4	Below Average
Math Fluency	79	72- 86	8	Below Average

Table 3. Joseph's Subtest Scores

Subtest	Standard Score	95% Confidence Interval	Percentile Rank
Word Reading	72	67–77	3
Pseudoword Decoding	70	65–75	2
Reading Comprehension	80	70–90	9
Oral Reading Fluency	87	79–95	19
Math Fluency- Addition	83	70–96	13
Math Fluency- Subtraction	74	64–84	4
Math Fluency- Multiplication	84	75–93	14
Sentence Composition	72	60–84	3
Essay Composition	83	73–93	13
Spelling	79	72–86	8

On the **Basic Reading** composite, Joseph's score of 71 was below average, indicating that Joseph performed equal to or higher than three percent of similar aged students. Joseph's **Comprehension and Fluency** composite of 79 fell in the *below average* range, which is equal to or better than 8 percent of similar aged students. Joseph's **Written Expression** composite also is low, suggesting that he may struggle on tasks requiring sentencing, syntax, and spontaneous writing and spelling. Joseph's **Math Fluency** score is below average at the 8th percentile.

Curriculum-Based Measurement of Oral Reading Fluency (CBM-ORF)

CBM-ORF tests Joseph's accuracy and speed when reading aloud, and is important for comprehension. Joseph was given three reading passages and read aloud for one minute. The middle (median) score of the three passages for words read correctly (WRC) and for words read incorrectly (WRI) are listed in Table 4. The median score reflects Joseph's "true" ability because average scores can be inaccurate if one or more of the reading passages are too easy or too hard.

To find an appropriate level of difficulty for reading materials, Joseph began by reading at a second grade level, then first grade, and then with extremely easy stories suited to kindergarten.

The **Benchmark** column lists the range of words read correctly (WRC) that would be expected for most average-achieving students of Joseph's age. The **Accuracy** column takes into account how many errors he makes, and is Joseph's WRC divided by the total number of words he attempted to read. **Performance Level** is the difficulty Joseph had with each grade level passage.

Table 4. Joseph's CBM-ORF Scores

Passage Level	WRC / WRI	Benchmark	Accuracy	Performance Level
Second Grade	34 / 12	60 – 90 WRC 1 – 3 WRI	74%	Frustrational
First Grade	50 / 2	65 - 95 WRC 1- 3 WRI	96%	Instructional
Kindergarten	60 / 0	> 20 WRC 1 – 4 WRI	100%	Mastery

On second grade reading passages, Joseph read 34 words correctly per minute and made 12 errors, much lower than most children at this level. With only 74% accuracy, he may experience frustration with materials at this level. With first grade passages, he read 50 words with high accuracy (96%). Joseph read Kindergarten passages quickly and with no errors.

Curriculum-Based Measurement of Mathematics Computation Fluency (M-CBM)

M-CBM tests Joseph's accuracy and speed with written math computations. Joseph was administered three worksheets with mixed addition and subtraction problems. The middle (median) score of the three worksheets are listed in the table below as Digits Correct (DC) and Digits Incorrect (DI). The assessment began with the second grade level, then first grade, and then to kindergarten addition under sums of 5. This was done to assess instructional level.

Information in the table is similar to Table 4 (above), showing the typical benchmarks for average students and describing Joseph's accuracy and performance level.

Table 4. Joseph's M-CBM Scores

Level	DC / DI	Benchmark	Accuracy	Performance Level
Second Grade	7 / 5	15 - 35 DC 1 – 3 DI	58%	Frustrational
First Grade	11 / 5	13 - 25 DC 1- 3 DI	69%	Instructional
Kindergarten	13 / 2	> 10 DC 1 – 4 DI	87%	Mastery

On second grade computation problems, Joseph had low (58%) accuracy and speed compared to typical performance. With first grade computation, Joseph had 11 digits correct with five errors (69% accuracy). When given Kindergarten material Joseph scored 13 digits correct with high (87%) accuracy.

Appendix C
TEACHER SURVEY

1. Please write in the number of years you have spent working in your current (or a very similar) role? _____

2. Please select your gender.
1.   _   Male
2.   _   Female

3. Please write in your age. (optional) _____

4. What is your ethnicity?
1. _ White / Caucasian
2. _ Black / African American
3. _ Hispanic / Latino/a
4. _ Asian
5. _ American Indian or Alaska Native
6. _ Native Hawaiian or Other Pacific Islander
7. _ Other

5. Please indicate your role in the school.
 1. _ Regular Education Teacher
 2. _ Special Education/ Exceptional Children Teacher
 3. _ Paraprofessional / Teaching Assistant
 4. _ Instructional Support, Title I teacher
 5. _ Special Area Teacher (phys ed, art, music, etc.)
 6. _ ELL / EL Teacher
 7. _ Staff / Other: _____

6. Please write in the grade level you currently teach or assist or the grade you have the most experience teaching. If you teach or assist multiple grades, write in "multiple."
 Grade Level: _____

7. Are you currently board certified (or will be sitting for board certification soon)?
1.   _ Yes   2.   _ No

8. How frequently are you in contact with the school psychologist in your building or district?
 1. _ Never   2. _ Sometimes   3. _ Often   4. _ Almost every day

9. How familiar are you with curriculum-based measurement of oral reading fluency (CBM-ORF)?
 1. _ Not familiar at all   2. _ Somewhat familiar   3. _ Very familiar   4. _ I use it every day

10. Do you have expertise or certification in reading or reading interventions?
 1. _ Yes   2. __No

Appendix D
REPORT UTILITY SCALE

Please rate your satisfaction with the report on pages 2-5 using the rating scale to the right of each item.

	Strongly Disagree				Strongly Agree
1. The report was teacher friendly	1	2	3	4	5
2. The professional who wrote the report appeared to be credible	1	2	3	4	5
3. Overall I was satisfied with the report	1	2	3	4	5
4. The report examined the problem for which the child was referred	1	2	3	4	5
5. The report presented information in a logical format	1	2	3	4	5
6. The student's difficulties were clearly explained	1	2	3	4	5
7. The student's strengths were clearly explained	1	2	3	4	5
8. I learned a sufficient amount of information about the child's achievement from reading this report	1	2	3	4	5
9. The way the information was organized made sense to me	1	2	3	4	5
10. The report relied on technical terms and provided insufficient explanation of these terms	1	2	3	4	5
11. The readability of the report is adequate for me	1	2	3	4	5
12. The report is better than other reports I have read	1	2	3	4	5
13. The report provided information that would be relevant to me in making instructional decisions about the child	1	2	3	4	5
14. The report provided information that would be useful to me in planning interventions or remediation for the child	1	2	3	4	5

INSTRUCTIONS AND CONSENT DISCLOSURE

You are being invited to participate in a research study "The Social Utility of Achievement Evaluations" being conducted by Ashley Noble, a student at East Carolina University in the School Psychology program.

As part of this study, you are asked to read a report about a fictional second grade student. The report is featured on pages 2 – 5. The report includes information about the student's achievement, and does not include information about behavior, cognitive skill or IQ. The report also does not include summaries or recommendations.

After you read the report, you will be asked to do three things: (a) fill out a checklist about the usefulness of the report, (b) choose an appropriate reading intervention based on information in the report, and (c) fill out a survey about yourself and your experience. You may refer back to the report on pages 2 – 5 when you are choosing the reading intervention.

Please assume that the student in the report is of average intelligence, has no severe behavior problems, and is willing to follow your directions.

It is hoped that the information you will provide will help me learn about how to write reports that are useful for teachers. This should take approximately 10-15 minutes to complete. Please do not mark your name anywhere on the packet, this is intended to be anonymous.

Your participation in the research is **voluntary**. You may choose not to answer any or all questions, and you may stop at any time. There is **no penalty for not taking part** in this research study. Please call Ashley Noble at 910-620-9023 for any research related questions or the UMCIRB at 252-744-2914 for questions about your rights as a research participant.

Please take time to ask any questions prior to beginning.

ACTIVITY: READING INTERVENTION SELECTION

Although the achievement report you just read assessed many different areas, this activity pertains **only to reading**. In this activity, please use the report to find any information about Joseph's **reading skills** that will help you select a reading intervention. You do not have to be a reading teacher to complete this activity, please simply try to find information in the report that helps you choose what you believe to be the best intervention for Joseph.

Please complete the following two steps.

1. **First**, review both reading interventions on the next two pages. The interventions can be adapted and used at many grade levels and can be adapted to be short or long. The **goal of this activity** is to simply select what seems to be **appropriate content** (the intervention) and **difficulty** (grade level).

2. **Second**, after you have taken the time you need to re-examine the report and read each intervention, please **make only one choice** for each part in the box below.

PART 1: Circle only ONE intervention you believe to be best for Joseph

Intervention 1	**Intervention 2**
Supported / Paired Reading	**"Cold-Warm-Hot" Repeated Reading**

PART 2: **Circle only ONE** grade level below. This will be the grade level that the intervention is adapted for, and can be thought of as the difficulty level of the intervention.

Kindergarten	**First Grade**	**Second Grade**

INTERVENTION 1: SUPPORTED / PAIRED READING

<u>Brief Description</u>
This intervention provides children with a high level of support before and during reading, and then fades the support after they become more successful. During the intervention, the teacher reads a passage jointly with a student and helps them with difficult words.

<u>Steps</u>

1. Identify a brief reading passage of 150 - 250 words that tells a story.

2. Before reading, identify the words in the passage that the student is likely to struggle with.

3. Select five of the most difficult words and place them on flash cards.

4. Before the reading, show the student the flash card, read the word, and use it in the same sentence that it is used in the story. Ask the student to read the word. Repeat for each word.

5. Have the student find each of the words in the reading passage, and underline the words.

6. Be sure that the teacher and student are seated so that both can see the reading passage.

7. Tell the student that you will be reading the story first, and that you want them to raise their hand when you come to one of the difficult words that you practiced.

8. Read the story aloud at a typical pace and with expressiveness.

9. After you are done, tell the student that you will share the reading and that you will each read every other word. Begin by reading the first word.

10. After you are done, read the passage again but switch off with every sentence. If the student struggles with decoding a word for more than 3 seconds, provide the word immediately and prompt them to re-read the sentence.

<u>Materials Needed</u>
- Blank index cards
- Reading passage of 150 – 250 words.
- Pencil

INTERVENTION 2: "COLD-WARM-HOT" REPEATED READING

Brief Description

A student is given a familiar and relatively easy reading passage and is asked to read a passage aloud three or four times to practice reading aloud.

Steps

1. Identify a reading passage of interest that the student can read with almost perfect accuracy (as close to 100% as possible). The passage should be between 150 – 200 words that tells a story.

2. Tell the student that you would like them to read the story aloud, place the story in front of the student, and tell them to begin.

3. During the reading, use a stopwatch or other timer to indicate how many words the student is reading in one minute. However, do not time the student. Simply make a note of where the student is in the passage at one minute.

4. Have them work with you to graph the number of words they read in one minute on the first time they read the passage. Mark this with a large blue dot on the graph to signify that they were "cold" and needed to warm up.

5. Have the student read the story again. When they are finished, mark the graph with a large orange dot to signify that they are "warm."

6. Have the student read the story again. When they are finished, mark the graph with a large red dot to signify that they were "hot."

7. Repeat these procedures as many times as the student would like and each subsequent reading can be marked in red.

8. Each day, use a different story and graph the student's "cold – warm – hot" points each day.

Materials Needed

- A reading passage of 150 – 250 words.
- Stopwatch or timer
- A graph paper numbered from 1 – 120 on the vertical axis and with days on the horizontal axis (many of these are available at educational websites).
- A blue, orange, and red marker.

Appendix G

Demographic Questions Examined

1. Number of years working in current role. (Years in Current Role)

2. Role in school.

3. The grade level currently teach or have the most experience teaching. (Grade Level Taught)

4. Board certified or will be sitting for board certification soon. (Board Certification)

5. Frequently of contact with school psychologist. (Contact with School Psychologist)

6. Familiarity with curriculum-based measurement of oral reading fluency. (Experience with CBM-ORF)

7. Expertise or certification in reading or reading interventions. (Experience with Reading)

Appendix H

IRB Documentation

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board Office
1L-09 Brody Medical Sciences Building• 600 Moye Boulevard • Greenville, NC 27834
Office 252-744-2914 • Fax 252-744-2284 • www.ecu.edu/irb

Date: March 31, 2011

Principal Investigator: Ashley Noble, Student
Dept./Ctr./Institute: Dept. of Psychology
Mailstop or Address: Rawl 104, ECU

RE: Exempt Certification
UMCIRB# 11-0199
Funding Source: Unfunded

Title: "The Social Utility of Psychoeducational Evaluations."

Dear Ms. Noble:

On 3.29.11, the University & Medical Center Institutional Review Board (UMCIRB) determined that your research meets ECU requirements and federal exemption criterion #2 which includes research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects and any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

It is your responsibility to ensure that this research is conducted in the manner reported in your Internal Processing Form and Protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

The UMCIRB Office will hold your exemption application for a period of five years from the date of this letter. If you wish to continue this protocol beyond this period, you will need to submit an Exemption Certification Request at least 30 days before the end of the five year period.

Sincerely,

Chairperson, University & Medical Center Institutional Review Board

Pc: Dr. Scott Methe