Spring 5-1-2013

Comparing Oral Reading Fluency Growth to Elementary-Level Students' Pre-Assessment Disposition

Katie Flatley
Syracuse University

Comparing Oral Reading Fluency Growth to Elementary-Level Students' Pre-Assessment Disposition

A Capstone Project Submitted in Partial Fulfillment of the
Requirements of the Renée Crown University Honors Program at
Syracuse University

Katie Flatley
Candidate for B.S. Degree
and Renée Crown University Honors
May 2013

Honors Capstone Project in Psychology

Capstone Project Advisor: _____
                          Tanya Eckert, Ph.D.

Capstone Project Reader: _____
                          Benita Blachman, Ph.D.

Honors Director: _____
                  Stephen Kuusisto, Director

Date: April 24, 2013

Abstract

  Reading is an essential skill; however, the majority of elementary-aged students are not performing at grade level. This is problematic because poor reading is a significant risk factor for dropping out of high school. A number of demographic factors have been associated with students' reading performance, including sex, socioeconomic status, and race/ethnicity. Educators use a number of measures to assess students' reading performance. One screening measure, curriculum-based measurement in reading (CBM-R), is a time- and cost-efficient tool to assess elementary-aged students' oral reading fluency. However, a number of research studies have shown that students' performance on CBM-R assessments may be influenced by contextual factors, including who conducts the assessment, where the assessment is conducted, and whether or not the assessment is timed. The impact of students' pre-assessment disposition on CBM-R scores has yet to be sufficiently examined. The purpose of this study was to investigate whether a combined model, which included demographic factors (i.e. sex, socioeconomic status) and a contextual factor, (i.e. student disposition) significantly predicted variance in students' oral reading fluency growth. A standard multiple regression was conducted and results demonstrated that the combined model of sex, socioeconomic status, and disposition significantly predicted variance in students' oral reading fluency growth. $F (4, 35) = 3.35$, p = .02. Sex on its own was found to be a significant predictor of variance in students' oral reading fluency growth, but disposition was not. There was a positive correlation between sex and oral reading fluency growth ($r = .44, p = .004$) and a positive correlation between disposition and oral reading fluency growth ($r = .38, p = .010$). The link between disposition and oral reading fluency growth should not be ignored. Educators should consider this link prior to conducting and interpreting reading assessments.

Table of Contents

Acknowledgements

I am so grateful for everyone who has helped make this project a possibility. My parents and friends have saturated me with endless support throughout my academic career. The Honors staff has been tremendously helpful. I have learned more than I could've ever hoped from my reader, Dr. Benita Blachman, who is a fantastic teacher. Lastly, my advisor, Dr. Tanya Eckert, is an incredible mentor and role model in the truest sense.

Advice to future honors students

1. Find a topic you love. I can't stress this point enough. If you don't love what you're working on, the Capstone is going to feel like a chore, which is the worst possible thing that could happen.

2. Use the resources Honors provides for you and form a relationship with the staff at the Honors office. This is actually a piece of advice I wish I had followed myself. There were a lot of times when I encountered hiccups with my project, and I wish I had a better relationship with the Honors staff to help me through those obstacles.

3. Be persistent and advocate for yourself and your ideas. I was ready to drop out of honors as a first semester junior when I was first applying to research labs. I had offers from three different labs, but when I told them I was looking for a Capstone advisor, none of them were willing to do it. Junior year is a huge hurdle for a lot of Honors students because it's when Honors becomes more than just getting to take special classes and having an early enrollment time. This is when the Capstone starts becoming real. If you find something you really want to do, you have to make it happen for yourself.

4. Form a strong relationship with your advisor. Seriously. I'm not exaggerating when I say that I met with my advisor at least once a week my entire senior year. It's also really important to be comfortable with your advisor and to be able to feel like you can be open and candid with them.

5. Be prepared for things to go drastically wrong. Odds are, not everything with your project is going to run smoothly. The more flexible and adaptable you are, the more likely you will be able to recover.

6. Start early. Start early. Start early. Even if you just start a literature review, I really recommend having at least ten pages written by the time you start your senior year. If your advisor is willing to do this for you, I also found it really helpful to work on one paragraph or section at a time, have my advisor edit it, and then continue to work on the next section.

Introduction

Reading is a fundamental skill that, unlike spoken language, is not innately learned. Although children can learn spoken language by being immersed in an environment where language is prevalent, children cannot learn to read by simply watching other people read. Instead, children must actively learn to read at a young age in order to become literate. The National Research Council (1998) discusses potential reasons why written English is so difficult for children to learn. For example, English is considered to be a "deep orthography," or a written form of language where alphabetic letters represent single sounds, or phonemes. However in some instances, letters in the English language do not directly correspond to their phoneme counterparts. Letters such as "c" can be pronounced /s/ or /k/ depending on the context. The National Research Council points out that the English language will "compromise phonological representations in order to reflect morphological information" (p. 23). In addition, English borrows outdated rules from historical spelling of languages that are no longer translated into the spoken version of the word. They use the example of the letters "ph" translating into the phoneme /f/, a rule that was taken from the Greek language. These issues with the English alphabet system make it difficult for children of any reading level to initially learn to read because without one-to-one correspondence between letters and sounds, the language becomes even more abstract.

Considering these phonological barriers that may cause difficulty for some children, it is not surprising that many children experience difficulty learning to read. In 2011, the National Center for Educational Statistics released the "Nation's Report Card: Reading 2011." In this publication, over 380,000 students in fourth and eighth grade participated in the National Assessment of Educational Progress in reading. The outcomes of this assessment provide data on students' reading proficiency in the United States, including factors that correlate to children's reading ability such as socioeconomic status, ethnicity, and gender. This longitudinal assessment of student achievement compares all of these different demographic factors to previous years' results at the national level and then explores these factors at the statewide level as well.

This literature review will begin by discussing the state of reading in the United States and how reading achievement has remained relatively static. It will also review demographic and home environmental factors that may impact children's reading achievement, how reading achievement is currently assessed, and idiosyncratic factors, such as mood, that may impact the reliability and validity of reading assessment measures.

Condition of Reading in the United States

Periodically, the National Assessment of Educational Progress summarizes the results of data collected on children's academic achievement across the United States at the national level and at the state level, and reports the information, available to the public, in a comprehensive assessment known

as the "Reading Report Card". The governing board of the National Assessment of Educational Progress, using information from educators, policy makers, and members of the general public, set criterion-referenced levels of achievement based on students' grade levels and subject matter (National Center for Educational Statistics, 2012). The levels include *Basic*, *Proficient*, and *Advanced*. The Reading Report Card defines *Basic* as "partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade" (p. 6). The standards for *Proficient* are considered "solid academic performance. Students reaching this level have demonstrated competency over challenging subject matter" (p. 6). A score at the level of *proficient*, arguably, indicates that a child is reading at grade-level, meaning that the student is able to grasp concepts for his or her educational stage. Lastly, *Advanced* is defined as a level that "represents superior performance" (p. 6).

In 2011, the results of the Reading Report Card show that in reading, 33% percent of fourth grade students perform at the *below basic* level, 33% perform at the *basic* level*, 26% percent perform at the *proficient* level, and only 8% percent perform at the *advanced* level (National Center for Educational Statistics, 2012). In New York specifically, 32% percent of fourth grade students perform at the *below basic* level*, 33% percent perform at the *basic* level, 26% percent of fourth grade students perform at the *proficient* level, and 9% percent perform at the *advanced* level (National Center for Educational Statistics, 2012).

These data show that the majority of fourth grade students in the United States are performing reading achievement tasks below grade-level, and that only 34% of fourth grade students are reading at or above grade-level. Alarmingly, these results have remained relatively unchanged since the last report in 2009, and reading achievement scores in fourth grade students have only increased slightly since 1992 (National Center for Education Statistics, 2012). The significance of poor reading achievement in elementary schools is high, and it has been shown that as many as 75% of struggling readers in third grade continue to struggle throughout their high school careers (Eckert, Dunn, Rosenblatt, & Truckenmiller, 2008).

Demographic and Familial Factors Influencing Children's Reading Achievement

The National Research Council (1998) discusses the importance of exposure to print using books and television programs like *Sesame Street* at a young age for infants in order for the child to develop literacy skills. In cases where children are supported at home and at daycare facilities, children as young as 8 months begin to interact with books when they are read to, including grabbing at the book and babbling. Closer to two years of age, children begin to actually use coherent speech to interact with the markings in front of them. Often times this speech is not actually the child reading the letters and words in the books, but instead is a result of the child memorizing the story. At this age, children also begin to write scribbles and symbols meant to be letters. Although literacy development can happen early, lack of

stimulation in a home literacy environment is correlated to low reading achievement at a later age. Familial involvement in a child's development in reading is very important, and there are a number of factors that influence reading, including familial emphasis on literacy, access to reading materials, and exposure to reading materials (Snow, 1998). These home environmental factors moderately correlate to a child's reading success in the future.

Although there are some demographic and familial factors that may positively influence a child's reading, a notable factor that negatively influences reading is the primary language spoken at home. Goldenberg (2008) defines English Language Learners as students "who speak English either not at all or with enough limitations that he or she cannot fully participate in mainstream English instruction" (p. 10). These students, who may also be referred to as Limited English Proficiency (LEP) or English as a Second Language (ESL), may account for a substantial portion of students in schools who experience reading difficulties. Goldenberg (2008) notes that in the past 20 years there has been a substantial increase in the number of LEP and ESL students enrolling in public schools across the United States. The National Research Council (1998) identifies "Home Language Other Than English" as a risk factor for the development of reading difficulties in young children. More specifically, the National Research Council highlights the importance of cultural factors that may coincide with linguistic development, such as family income and sociopolitical factors. As a result, it appears that

native language spoken is an important factor influencing children's reading achievement.

According to the 2011 Reading Report Card, English Language Learners account for 24% of fourth-grade students below the 25th percentile in reading, whereas only 2% of fourth grade students who scored above the 75th percentile are English Language Learners (National Center for Education Statistics, 2012). In other words, English Language Learners account for almost a quarter of students at the lowest end of the scale of reading achievement, yet these students are hardly represented at the level of high achievement on this scale.

Another demographic factor influencing children's reading achievement is household income. The 2011 Reading Report Card classifies the phrase "low income" in accordance with the standards set by the National School Lunch Program. Eligibility for reduced-price lunches in elementary schools generally varies from between 130% and 185% of the poverty level across states. In other words, if the poverty level were $10,000, household incomes between $13,000 and $18,500 would be the guidelines for eligibility for reduced-price lunches. Currently, the national levels of students eligible for reduced price or free lunches according to the National School Lunch Program reflect the country's current economic standing, in that over 50% of public school students are eligible for these lunch programs.

The 2011 Reading Report Card reports that 74% of students who scored below the 25th percentile in reading were eligible for free or reduced price school lunches, whereas only 23% of students scoring above the 75th

percentile in reading were eligible for free or reduced price school lunches (National Center for Education Statistics, 2012). This implies that almost three out of four students who have the lowest scores in reading achievement were classified as "low-income," and only around one in four students with the highest scores in reading achievement were classified as "low-income." In 2011, the scores of fourth grade students who were eligible for reduced-price or free lunch were significantly lower than the students who were not eligible for reduced-price or free lunch (National Center for Education Statistics, 2012).

Assessment of Children's Reading Achievement

There are two distinct ways in which student academic performance can be measured: indirect and direct measures (Cone, 1992). Whereas indirect measures include norm-referenced and criterion-referenced assessments, direct measures relate to the students' classroom curricula. Direct assessments have been developed to specifically monitor students' classroom achievement because they are quick, easy to administer, and may be administered regularly to allow for progress monitoring (Deno, 1985; Marston, 1989; Shapiro, 1996). Curriculum-Based Measurement, or CBM, is an example of a direct measure that is designed for educators to monitor students' basic academic skills and make instructional decisions (Shapiro 1996).

There are two models of CBM that are primarily used by researchers and practitioners as a direct assessment of academic performance: Fuchs and Fuchs' model (Fuchs, Fuchs, & Hamlett, 1990; Fuchs, 1998) and Shinn's model (Shinn, 1989; Shinn 1998). Fuchs and Fuchs' model of CBM serves as

a problem-solving model designed for use by classroom teachers so that the teacher may develop an appropriate instruction program for a student (Fuchs, Fuchs, & Hamlett, 1990). Shinn's model of CBM differs from Fuchs and Fuchs' model in that it suggests that a comprehensive educational team made of teachers and school psychologists use CBM to evaluate the effectiveness of an intervention in the occasion that a student experiences a discrepancy between the progress expected in the classroom and the progress the child actually makes (Shinn, 1998).

CBM can be used to assess a variety of academic areas, including spelling, writing, and math, but research on CBM is primarily focused on the assessment of reading (Shapiro, 1996; Shinn, 1989; 1998). A number of studies have examined the reliability and validity of CBM, suggesting that it has adequate psychometric properties for making screening decisions. A major function of CBM is to allow practitioners to monitor progress of a student's reading skill, and a number of studies have been conducted to examine variations in progress monitoring procedures (Fuchs, 1989; Fuchs & Fuchs, 1986; Shinn & Hubbard, 1992; Shapiro, 1996; White, 1972). These studies have shed light on the details associated with CBM administration, including frequency and duration of the assessment. Specifically, Fuchs and Fuchs (1986) suggest that progress monitoring data should be collected twice per week, and that data collected any more frequently does not improve accuracy. In addition, White (1972) proposes that the assessment should last

three to four weeks, arguing that seven to ten data points are necessary to establish a trend in progress.

Although issues related to the technical aspects of administration of these assessments have been readily studied, questions have arisen about whether or not the reliability and validity of these measures actually lie in the technical aspects of administration, or if it would be more appropriate to adopt a behavioral perspective when examining the reliability and validity of these measures (Shapiro, 1996). In other words, it may be beneficial for researchers to examine the adequacy of CBM from an idiographic, rather than nomothetic, standpoint, which would suggest that students' performance should be compared to their past performance as opposed to a normative sample (Derr-Minneci & Shapiro, 1992).

Specifically, Derr-Minneci and Shapiro (1992) investigated various administration factors that may impact how accurately CBM represents students' reading skill, including who conducts the assessment, where the assessment is conducted, and whether or not the assessment is timed. The findings of this study show that reading assessments are more accurate when a teacher, as opposed to a school psychologist, conducts the assessment at the teacher's desk, as opposed to in a small reading group. In summation, "more natural or usual conditions of assessment yield better student oral reading performance" (Derr-Minneci & Shapiro, 1992, p. 14). The results of this study suggested that the conditions of the evaluation impact the results of the assessment, which may indicate that CBM does not accurately depict reading

skill under certain conditions. These findings introduce another question: what *other* factors may influence these results?

Disposition

Brand, Weimer, and Opwis (2007) indicate that mood may impact cognitive functioning, such as judgment and memory retrieval, and that "expectation of disappointment, can reduce development and transfer of knowledge" (p. 13). Mood may also impact attention; specifically, being in a negative mood may cause attention to be drawn to both task-relevant and task-irrelevant information, which may affect the way a child reads and comprehends text (Bohn-Gettler & Rapp, 2011). Bryan, Mather, and Sullivan (1996) also determined that posttest data of students with learning disabilities who were in an induced positive mood performed better during learning tasks than students with learning disabilities in a neutral mood. These findings consistently demonstrate that mood impacts cognition, learning, and reading. It is therefore reasonable to question whether or not mood may impact oral reading fluency assessment.

The purpose of this study was to examine the whether students' self-reported mood over the course of the study, along with other demographic predictor variables such as sex and socioeconomic status, could predict slope in oral reading fluency. Specifically, it was hypothesized that this set of variables could significantly predict slope, and that the disposition measure would have the highest level of unique predictability among these variables.

Method

Participants and Setting

Institutional Review Board approval was obtained through Syracuse University and the participating school district. Second through fifth-grade students from an urban public school servicing students in kindergarten through eighth grade in central New York were invited to participate. According to the school's 2010-2011 Accountability and Overview Report, a total of 865 students were enrolled in kindergarten through eighth grade. Of these students, 70% were eligible to receive free or reduced-price lunch. Most students identified their racial and/or ethnic composition as White (52%) or Black or African American (38%), whereas a small percentage of students identified themselves as Hispanic or Latino (7%), American Indian or Alaska Native (2%), and Asian or Native Hawaiian/Other Pacific Islander (1%).

Once parents were informed of their child's participation and student assent was obtained, students were screened for eligibility. Criteria for eligibility included: (a) the student was enrolled in a general education classroom; (b) the student did not have a severe cognitive deficit resulting in eligibility for special education services; (c) the student's primary language was English; (d) the student was not classified as reading disabled; (e) the student did not have a Section 504 plan providing him or her with additional instructional modification; and (f) the student did not have a significant hearing or vision impairment.

Demographic data of participants is detailed in Table 1. Of the 36 participants, 12 were male (33.3%) and 24 were female (66.7%). The majority of student participants identified their ethnic and/or racial composition as White (47.2%), 30.6% of participants identified as Black or African

American, 11.1% identified as Hispanic or Latino, 5.6% identified as Asian, 2.8% identified as American Indian or Alaska Native, and 2.8% identified as Native Hawaiian or Other Pacific Islander. Demographic data organized by grade is available in Table 2.

Experimenters

All research assistants completed ethics training for working with human research subjects in accordance with the Collaborative Institute Training Initiative. Research assistants were required to provide documentation that they successfully completed online courses in Social and Behavioral Focus and Responsible Conduct of Research. Seven graduate students served as experimenters and 16 undergraduate students served as research assistants. All undergraduate research assistants underwent training and had to score 100% on proficiency checks in the administration of CBM, scoring CBM measures, and entering data. A copy of the training manual provided to undergraduate research assistants is presented in Appendix C.

Materials

Reading Disposition Measure. The reading disposition measure was developed by Dr. Theodore Christ (University of Minnesota), Dr. Scott Ardoin (University of Georgia), and Dr. Tanya Eckert (Syracuse University). The measure consisted of three faces: a happy face, an indifferent face, and a sad face. The word "Excited" was written under the happy face, the phrase "Don't Mind" was written under the indifferent face, and the phrase "Not Excited" was written under the sad face. A student-copy of the reading disposition measure is shown in Appendix D.

Curriculum-Based Measurement in Reading (CBM-R). FAIP-R CBM reading progress monitoring probes were used to monitor each child's progress throughout the course of the study. During each session, participants were given three FAIP-R CBM probes and one DIBELS probe to complete. DIBELS scores were not used for this study.

Although few studies have examined the psychometric properties of CBM progress monitoring, the existing data suggest that CBM progress monitoring is a fairly reliable and valid measure of reading progress. Specifically, Fuchs, Fuchs, and Deno (1985) found that CBM progress monitoring data among students with learning disabilities and emotional disturbances were stable and reliable over time. In addition, alternate-form reliability of CBM progress monitoring probes has been demonstrated to be adequate across groups, ranging from .80 to .95 (Shinn, Gleason, & Tindal, 1989). Interscorer agreement in CBM progress monitoring has been shown to be high, ranging from 86% to 100% (Hintze, Daly, & Shapiro, 1998). The validity of CBM progress monitoring has also been examined (Fuchs, Deno, & Mirkin, 1984), demonstrating a significant relationship with standardized reading measures, such as the Reading Comprehension subtest of the Stanford Diagnostic Reading Test (Karlsen, Madden, & Gardner, 1976).

Procedures

The study was conducted twice per week over a period of ten weeks. One experimenter was assigned to assess one participant at a time. Experimenters quietly removed one participant from his or her classroom and sat with the participant on the floor in a neighboring hallway.

Reading disposition. Research assistants handed the participant the student version of faces. Appendix A displays the instructions given to each research assistant. During the first three weeks of assessment, research assistants were instructed to point to each face on the student copy and say, "Each face shows a person who is: excited to read for this activity, does not mind reading for this activity, or is not excited to read for this activity. Choose the face that best describes how you feel about participating in this activity today." After the first three weeks, research assistants were instructed to shorten the directions and say, "Look at each face and decide how you feel about participating today." The participant then stated or pointed to his or her choice and research assistants recorded both the face and corresponding numerical rating on the coversheet (Appendix B).

Curriculum-Based Measurement in Reading (CBM-R). The experimenters began by handing the participant the student copy of the CBM probe and say, "This is a story about [the experimenter would point to the name at the top of the probe and read the name out loud.] When I say '*begin,*' start reading aloud at the top of this page. Read across the page and then go to the next line. [The experimenter would then point to the first word of the probe and follow his or her finger across the first line.] Try to read each word. If you come to a word you don't know, I'll tell it to you. Be sure to do your best reading, ok? Ready, begin." The experimenters were instructed to start the stopwatch once the participant said the first word of the probe. Participants read the probe out loud for a minute while the experimenter followed along on the experimenter's copy of the probe. The experimenters were instructed to

mark any time the participant mispronounced a word, omitted a word, skipped a line of the passage, reversed the order of the words, or paused on a word for more than three seconds. If the participant paused on a word for more than three seconds, the experimenters were instructed to provide the word to the student. At the end of one minute, the experimenter told the participant, "Stop," and marked the last word the participant read with a bracket.

CBM-R scoring procedures. The number of words read correctly was calculated by counting the total number of words a student read during one minute and subtracting the total number of words read incorrectly during one minute. Words read correctly included both words the participant pronounced correctly and any words the participant initially read incorrectly but then self-corrected. Words read incorrectly included any words the participant mispronounced, substituted, omitted, transposed, and added or deleted an ending. Additionally, when a participant skipped a line, the experimenter considered this to be one error and redirected the participant to the appropriate line. Similarly, when a student paused for more than three seconds on a word the experimenter would provide the word to the student and considered the word an error. However, words the student repeated or inserted were not considered errors.

Experimental Design and Measurement

A standard multiple regression was used for this study in order to examine the ability of sex, socioeconomic status, and disposition to predict oral reading fluency growth. The dependent variable of the study was students' oral reading fluency growth, which was computed by calculating a

slope line. For each CBM passage reading, the mean number of words read correctly per minute (WRCM) was computed. The mean WRCM was calculated by adding the total number of WRCM across each one-minute passage and dividing by three. An ordinary least squares (OLS) estimate of the slope line was determined based on each participant's words read correctly per minute over the ten-week period. In comparison to other methods of estimation, the OLS has been found to provide a more accurate depiction of student performance (Shinn et al., 1989). Missed school days (i.e., absences, school vacations) were not entered into the analyses.

Results

Trained research assistants entered data into Microsoft Excel. Data were then transferred into SPSS 11.5 (SPSS Inc., 2007) to generate descriptive statistics, a multiple regression analysis, and graphs.

Preliminary analyses were conducted in search of violations of the assumptions associated with multiple regression analysis, including normality, linearity, multicollinearity, and homoscedasticity. Violations of normality were checked by examining the frequency distribution of scores, means, standard deviations, ranges, and outliers. All data met the assumption of normality, linearity, and homoscedasticity.

Table 3 displays the means and standard deviations of slope values and disposition scores organized by grade level. Students had an average slope of 0.15 ($SD = 0.14$), and an average disposition score of 147.28 ($SD = 33.36$). Slope ranged from -0.12 to 0.47, and the disposition scores ranged from 32 to 180. An analysis of the relationship between the variables suggested that oral

reading fluency slope was moderately correlated with disposition ($r = .38$, p = .010) and sex ($r = .44$, p = .004). There was a very small, negative correlation between slope and socioeconomic status ($r = -.11$, p = .30). The bivariate correlations are presented in Table 4.

A standard multiple regression analysis was conducted to examine whether the combined model of sex, socioeconomic status, and disposition score significantly predicted students' oral reading fluency slope. The results of the regression analysis indicated that the combination of these variables explained a statistically significant amount of the variance in students' oral reading fluency growth, $F (4, 35) = 3.35$, $p = .02$, with an R-squared value of .21 (see Table 5).

Discussion

As previously indicated, reading is an essential skill in our society. However, the results of the 2011 Reading Report Card demonstrates that the majority of fourth-grade students are consistently performing below grade level in reading. Alarmingly, almost 75% of students with reading difficulties in elementary school continue to have reading difficulties entering high school (Francis et al., 1996). As a result, it is important to identify elementary-aged students who are struggling with reading and ameliorate these difficulties (Eckert et al., 2008).

Methods of assessing elementary-aged students' reading performance have been researched, and curriculum-based measurement (CBM) has been identified as one method to assess students' oral reading fluency. However, Derr-Minecci and Shapiro (1992) found that students' oral reading fluency

scores assessed using curriculum-based measurement may be influenced by a number of factors including who conducts the assessment, where the assessment is conducted, and whether or not the assessment is timed. These findings raise the question of whether other contextual factors may impact the accuracy of CBM.

The purpose of this study was to examine whether the combined model of sex, socioeconomic status, and disposition predicted variance in students' oral reading fluency slope. Consistent with the study's main hypothesis, the results indicated that this model significantly predicted variance in students' oral reading fluency slope. Contrary to a secondary hypothesis, however, sex was the only variable that made a unique contribution to the prediction of students' oral reading fluency growth.

Results of this study also demonstrated a moderate correlation between students' disposition scores and their oral reading fluency growth. In other words, students who rated their mood higher at the beginning of each assessment tended to perform better over time than students who rated their moods lower at the beginning of each assessment.

Limitations

There are a number of limitations associated with the present study. First, a significant limitation to this study was that it was conducted with a relatively small sample size ($n = 36$). As a result, the study did not have adequate power to detect a medium effect. Another limitation is the lack of variability in students' socioeconomic status. An overwhelming majority of participants in the study qualified for free or reduced-price lunches. This

limitation impacts the ability to generalize the findings of this study because students who qualify for free or reduced-price lunches tend to have lower reading achievement levels than students who do not qualify for free or reduced-price lunches (National Center for Education Statistics, 2011). Thus, the results of this study can only be generalized to students with similar demographic characteristics.

Another limitation of this study is that Derr-Minecci and Shapiro (1992) found that students performed significantly better under the most natural conditions: when the teacher conducts the assessment at the teacher's desk and when the assessment is not timed. However in this study, the assessment was conducted by research assistants who are not as familiar to the students as a teacher would be. Additionally, the assessment was conducted outside of the classroom and was also timed. Therefore, the extent to which the assessment results were valid representations of the students' oral reading fluency is questionable.

Lastly, a limitation of this study is the question of whether or not all elementary-aged students have the ability to accurately self-identify and report their moods or dispositions. The disposition measure assumes that all students take the time to reflect on their mood prior to each assessment, but some students may just report the same mood prior to each session out of boredom, habit, or in an attempt to appease the experimenter.

Implications and Future Research Directions

The findings reported in this study may be a reflection of a number of factors. For one, the correlation between disposition and oral reading fluency

growth may be because children who enjoy reading may have a higher mood and perform better on reading tasks than students who don't enjoy reading when faced with a reading task. The findings of the 2011 Reading Report Card demonstrate that students who reported reading for fun almost every day scored higher in reading than students who read for fun less frequently. Additionally, the correlation between disposition and oral reading fluency growth may be a reflection on how mood affects the cognitive processes involved in reading, including memory retrieval, attention, and judgment.

The findings of this study suggest that additional research needs to be conducted to further examine the effects of students' mood on their oral reading fluency growth. Although the results of this study showed a positive correlation between disposition and oral reading fluency growth, students' disposition scores failed to contribute unique variance to the prediction of oral reading fluency growth, although this may have been related to the fact that this study was underpowered. Additionally, it may be beneficial to examine whether the effects on oral reading fluency growth are consistent across grades or if the effects differ as children get older. Another direction to take the research as a result of the findings would be to attempt to manipulate mood to determine causation between mood and oral reading fluency growth. Lastly, it may be beneficial to differentiate between pre-assessment mood and pre-assessment disposition. In this study, mood and disposition were used interchangeably. However, it may be worthwhile to examine whether a students' disposition toward completing a reading task is comparable to their

overall mood that day, and whether either of those variables are related to oral reading fluency.

Conclusions

A number of demographic and contextual factors can impact children's reading, including socioeconomic status, race, and environmental factors in the home. Although research has started uncovering the effects of some of these factors, reading performance in elementary-aged students has remained unacceptably low. The findings of this study suggest that at least one demographic factor, sex, may significantly predict the variability of students' oral reading fluency growth and another contextual factor, disposition, is positively correlated to students' oral reading fluency growth. In the future, it may be important for educators to consider and address students' disposition prior to conducting reading assessments. In the early stages of learning to read, it is important for parents and educators to introduce the activity of reading as pleasurable. If children consider reading to be pleasurable, as opposed to a chore, they may be more inclined to read for fun more frequently, they may be in a better mood while reading, and perhaps they may improve as a reader.

References

Brand, S., Reimer, T., & Opwis, K. (2007). How do we learn in a negative
mood? Effects of a negative mood on transfer and learning. *Learning
and Instruction, 17*, 1-16.

Bryan, T., Mather, S., & Sullivan, K. (1996). The impact of positive mood on
learning. *Learning Disability Quarterly*, 19(3), 153-162.

Bohn-Gettler, C. M., & Rapp, D. N. (2011). Depending on my mood: Mood-
driven influences on text comprehension. *Journal of Educational
Psychology*, 103(3), 562-577.

Cone, J. (1992). Accuracy and curriculum-based measurement. *School
Psychology Quarterly*, 7(1), 22-26.

Deno, S. L. (1985). Curriculum-based measurement: The emerging
alternative. *Exceptional Children*, 52(3), 219-232.

Derr-Minneci, T. F., Shapiro, E. S. (1992). Validating curriculum-based
measurement in reading from a behavioral perspective. *School
Psychology Quarterly*, 7(1), 2-16.

Dunn, E. K., Eckert, T. L. (2002). Curriculum-based measurement in reading:
A comparison of similar versus challenging material. *School
Psychology Quarterly*, 17(1), 24-46.

Eckert, T. L., Dunn, E. K., Rosenblatt, M. A., & Truckenmiller, A. J. (2008).
Identifying effective school-based reading interventions: A review of
the brief experimental analysis literature. *School Psychology Forum:
Research in Practice*, 2(3), 16-28.

Francis, D. J., Shaywitz, S. E., Stuebing, K. K., Shaywitz, B. A., & Fletcher, J.

M. (1996). Developmental lag versus deficit models of reading

disability: A longitudinal, individual growth curves analysis. *Journal*

of Educational Psychology, 88, 3–17.

Fuchs, L. S. (1989). Evaluating solutions: Monitoring progress and revising

intervention plans. In M. R. Shinn (Ed.), *Curriculum-based*

measurement: Assessing special children (pp. 153-181). New York,

NY: Guilford Press.

Fuchs, L. S., Deno, S. L., & Mirkin, P. L. (1984). The effects of frequent

curriculum-based measurement and evaluation on pedagogy, student

achievement, and student awareness of learning. *American*

Educational Research Journal, 21, 449-460.

Fuchs, L. S., & Fuchs, D. (1986). Curriculum-based assessment of progress

toward long-term and short-term goals. *The Journal Of Special*

Education, 20(1), 69-82.

Fuchs, L. S., Fuchs, D., & Deno, S. L. (1985). The importance of goal

ambitiousness and goal mastery to student achievement. *Exceptional*

Children, 52, 63-71.

Fuchs, L. S., Fuchs, D., & Hamlett, C. L. (1990). Curriculum-based

measurement: A standardized, long-term goal approach to monitoring

student progress. *Academic Therapy*, 25(5), 615-632.

Goldenberg, C. (2008). Teaching English Language Learners: What the

research does—and does not—say. *American Educator*, 32(2), 8-44.

Hintze, J. M., Daly, E. J., & Shapiro, E. S. (1998). An investigation of the

    effects of passage difficulty level on outcomes of oral reading fluency

    progress monitoring. *School Psychology Review*, 27, 433-445.

Karlsen, B., Madden, R., & Gardner, E. F. (1975). *Stanford Diagnostic*

    Reading Test. Atlanta, GA: Harcourt Brace.

Marston, D. B. (1989). A curriculum-based measurement approach to

    assessing academic performance: What is it and why do it. In M. R.

    Shinn (Ed.), *Curriculum-based measurement: Assessing special*

    children (pp. 18-78). New York, NY: Guilford Press.

National Center for Education Statistics (2011). *The Nation's Report Card:*

    Reading 2011 (NCES 2012-457). Institute of Education Sciences, U.S.

    Department of Education, Washington, D.C.

Shapiro, E. S. (1996). Academic skills problems: Direct assessment and

    intervention (2nd edition). New York, NY: Guilford Press.

Shinn, M. R. (1989). *Curriculum-based measurement: Assessing special*

    children. New York, NY: Guilford Press.

Shinn, M. R. (1998). *Advanced applications of Curriculum-Based*

    Measurement. New York, NY: Guilford Press.

Shinn, M. R., Gleason, M.M., & Tindal, G. (1989). Varying the difficulty of

    testing materials: Implications for curriculum-based measurement. *The*

    Journal of Special Edudation, 23, 223-233

Shinn, M. R., & Hubbard, D. D. (1992). Curriculum-based measurement and

    problem-solving assessment: Basic procedures and outcomes. *FOCUS*

    on Exceptional Children, 24(5), 1-20.

Snow, C. E., Burns, M. S., & Griffin, P. (1998). *Preventing Reading Difficulties in Young Children*. Washington, D.C.: National Academy Press.

White, O. R. (1972) *A manual for the calculation and use of the median slope--A method for progress estimation and prediction in the single case.* Working paper #16, Regional Resource Center for Handicapped Children, University of Oregon.

Table 1

Student Demographic Information (N=36)

	%	(n)
Sex		
Female	66.7	(24)
Male	33.3	(12)
Race		
American Indian or Alaska Native	2.8	(1)
Asian	5.6	(2)
Black or African American	30.6	(11)
Native Hawaiian or Other Pacific Islander	2.8	(1)
White	47.2	(17)
Hispanic or Latino	11.1	(4)
Ethnicity		
Hispanic or Latino	11.1	(4)
Not Hispanic or Latino	88.9	(32)
Socioeconomic Status		
Eligible for free/reduced price lunch	86.1	(31)
Not eligible for free/reduced price lunch	11.1	(4)
Not specified	2.8	(1)
Special Education Eligibility		
Not eligible for special education	86.1	(31)
Specific learning disability	11.1	(4)
Speech or language impairment	2.8	(1)

Table 2

Student Demographic Information by Grade

	Grade 2		Grade 3		Grade 4		Grade 5	
	%	(n)	*%*	(n)	*%*	(n)	*%*	(n)
Sex								
Female	77.7	(7)	77.7	(7)	44.4	(4)	66.6	(6)
Male	22.2	(2)	22.2	(2)	55.5	(5)	33.3	(3)
Race								
American Indian or Alaska Native	11.1	(1)	0.0	(0)	0.0	(0)	0.0	(0)
Asian	0.0	(0)	0.0	(0)	11.1	(1)	11.1	(1)
Black or African American	22.2	(2)	33.3	(3)	33.3	(3)	33.3	(3)
Native Hawaiian or Other Pacific Islander	0.0	(0)	0.0	(0)	11.1	(1)	0.0	(0)
White	55.5	(5)	66.6	(6)	22.2	(2)	44.4	(4)
Hispanic or Latino	11.1	(1)	0.0	(0)	22.2	(2)	11.1	(1)
Ethnicity								
Hispanic or Latino	11.1	(1)	0.0	(0)	22.2	(2)	11.1	(1)
Not Hispanic or Latino	88.8	(8)	100	(9)	77.7	(7)	88.8	(8)
Socioeconomic Status								
Eligible for free/reduced price lunch	88.8	(8)	88.8	(8)	88.8	(8)	77.7	(7)
Not eligible for free/reduced price lunch	11.1	(1)	0.0	(0)	11.1	(1)	22.2	(2)
Not specified	0.0	(0)	11.1	(1)	0.0	(0)	0.0	(0)
Special Education Eligibility								
Not eligible for special education	100	(9)	88.8	(8)	100	(9)	100	(9)
Specific learning disability	0.0	(0)	0.0	(0)	0.0	(0)	0.0	(0)
Speech or language impairment	0.0	(0)	11.1	(1)	0.0	(0)	0.0	(0)

Table 3

Slope and Disposition Descriptive Data

Grade	Slope			Disposition	
	Mean	SD		Mean	SD
2nd	0.24	0.11		148.44	40.27
3rd	0.19	0.11		162.44	17.66
4th	0.09	0.09		137.78	15.11
5th	0.06	0.19		140.44	47.89
Overall	0.15	0.14		147.28	33.36

Table 4

Correlations

	Slope	Disposition	Female	Eligibility
Pearson Correlation				
Slope	1.000	.384**	.441**	-.108
Disposition	.384**	1.000	.393**	.137
Female	.441**	.393**	1.000	.063
Eligible for free/reduced price lunch	-.108	.137	.063	1.000

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

Table 5

Regression Analysis for Variables Predicting Slope in Oral Reading Fluency

Variable	B	SE B	β
Disposition	.001	.001	.274
Female	.097	.049	.323*
Eligible for free/reduced price lunch	-.213	.143	-.474

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

Appendix A

Examiner Directions for Daily Assessments of Student Disposition, Behavior, and Testing Conditions

---

Student Disposition Rating

1. Before beginning with the assessment, place the student version of faces in front of the student.

2. During the <u>first three weeks of assessment</u> say:
   "Each face is for a person who is:
   (point to the excited face) **excited to read for this activity,**
   (point to the straight face) **does not mind reading for this activity, or**
   (point to the sad face) **is not excited to read for this activity.**
   Choose the face that *best* **describes** *how you feel* **about participating in this activity today. "**
   During the <u>remaining weeks of assessment</u> say:
   "Look at each face and decide *how you feel* **about participating today."**

3. Record the student's response on the coversheet and provide a corresponding rating.

Examiner's Ratings of Student Disposition

1. On a scale of 1 to 3, rate the student on each of these items on the coversheet:
   I. <u>**Listened to directions**</u> (e.g., eye-contact, demonstrated understanding through nodding, asked appropriate questions).
   II. <u>**Read attentively throughout the task**</u> (e.g., looked at passages, kept reading through low background noise/ interruption, kept appropriate pace, tone, prosody, attempted to read all words even if difficult, started and stopped at correct times, etc.).
   III. <u>**Interacted appropriately with administrator during task**</u> (e.g., willingness to participate, followed directions, behaved with relative calm, made appropriate comments).

Student Behavior Observation

1. On the coversheet, check whether the student demonstrated any of the behaviors listed during the session.

Environmental Testing Conditions

1. On the coversheet, check the representative items.

Appendix B

FAIP | Formative Assessment Instrumentation and Procedures

ID: _____ Experimenter: _____ Date:_____

Student's Self-Disposition Rating

Day of Week	Rating			Numerical Rating		
M T W Th F	☹	😐	😊	**1** Not Excited	**2** OK	**3** Excited

Examiner's Ratings of Student Disposition

Listened to Directions			Read Attentively Throughout Task			Interacted Appropriately with Administrator		
1 Not at all	**2** Somewhat	**3** Yes	**1** Not at all	**2** Somewhat	**3** Yes	**1** Not at all	**2** Somewhat	**3** Yes

Examiner's Observation of Student Behavior

Behavior	✓
Unusual restlessness: repetitive, purposeless motion more than 2 times (e.g., squirming, shifting positions constantly, tapping pencil, lifting self off of seat, kicking legs)	
Vocal complaints (e.g., explicit complaints, sighing, moaning, etc.)	
Talking with peers during task time	
Constant talking to administrator	
Interrupting task verbally or physically (e.g., playing with testing materials)	
Unhappy or angry facial expression	
Watching other people during task time	

Environmental Testing Conditions

✓	Type of Test Setting	✓	Distractions During Testing	✓	Noise Level
	Hall, stair landing, doorway		Bell rang Probe # _____		Very High Probe # _____
	Classroom (in-use)		Announcement Probe # _____		High Probe # _____
	Classroom (empty)		Fire drill or other emergency Probe # _____		Average Probe # _____
	Office (general area)		Noise from passing student(s) Probe # _____		Low-Quiet Probe # _____
	Office (room)		Noise from nearby classroom Probe # _____		Other:
	Other:		Other:		
Notes:					

Appendix C

2011-2012 TRAC RESEARCH PROJECT

RA Training Manual: Administration and Scoring of Curriculum- Based

Measurement in Reading Probes

Curriculum-Based Measurement - Introduction

Curriculum-Based Measurement (CBM) is an alternative measurement system that has been developed for assessing students' academic skills. CBM is designed to provide a reliable and direct estimate of students' skills. In addition, CBM is sensitive to measuring student growth over time. The measures collected are brief and repeatable, and generally consist of timed reading passages. These passages are often referred to as "probes." For the purposes of this project, we will be focusing on using CBM in the academic area of reading (R-CBM). R-CBM emphasizes assessing basic reading fluency as the foundation upon which success in other aspects of reading are developed. To assess basic reading fluency, we will be providing students with a short reading passage and asking students to read the passage aloud. The students are instructed to do their best reading and then read the passage for 1 minute. A sample R-CBM passage appears below:

Student Copy   Passage 1

Pam

    Friday was show-and-tell day at Pam's School. Her dad had just

made her a doll out of cloth. She was going to bring her new doll to

show-and-tell. She took out her blue sweater to wear that day. It

was her favorite and she wanted everyone to see it. But her dad told

her the sweater was dirty. Pam decided she was old enough to wash it herself.

    She never used the washer before, but she wanted to try. Pam watched her dad wash clothes every week. She

tried to do the same thing that he did. First, he took the

sweater downstairs to the washer. She opened the washer

door and put it inside. She added soap and turned

R-CBM - Administration

Materials:

The following materials are needed for administering R-CBM probes:

(1)   the student's copy of the R-CBM probe
(2)   the experimenter's copy of the R-CBM probe
(3)   a stopwatch for the examiner
(4)   a writing instrument for the examiner

Administration:

The examiner distributes a copy of the R-CBM probe to the student being assessed. The examiner provides the following directions to the student for the <u>first passage</u>:

"THIS IS A STORY ABOUT _____ (& _____).
(Point to the name(s) of characters OR descriptor at the top of the story;
When I say 'BEGIN,' start reading aloud at the top of this page.
Read across the page and then go to the next line.
(POINT TO THE FIRST WORD AND ACROSS THE FIRST LINE).
Try to read each word.
If you come to a word you don't know, I'll tell it to you.
<u>BE SURE TO DO YOUR BEST READING</u>.
OK? (PAUSE)
READY, BEGIN"

The examiner starts the stopwatch when the student says the first word. If the student fails to say the first word of the passage after 3 seconds, tell them the word, mark the word as incorrect, then start the stopwatch. For the next minute, the examiner will track the error types the student

---

2

makes on the Examiner Copy of the R-CBM probe. At
the end of 1 minute, the examiner says, "STOP"
and collects the probe.

The examiner provides the following directions to the student for
the <u>remaining passages</u>:

"THIS IS A STORY ABOUT _____ (& _____).
<u>BE SURE TO DO YOUR BEST READING</u>. (PAUSE)READY,
BEGIN"

R-CBM - Administration

If the student pauses on a word for more than 3 seconds, provide the word to the student (and score this as an error).

If the student finishes reading the passage before the 1 minute has elapsed, record the number of seconds at the time the story was completed directly on the reading passage.

At the end of one minute mark with a bracket, the last word the student read.

If you make a mistake during administration, note the mistake on the passage.

Remember, this is an experiment. Follow the directions exactly and do not correct errors or give any kind of feedback.

R-CBM - Scoring

The examiner counts and records the types of errors the student makes during the 1-minute reading. The types of errors are as follows:

- Mispronunciations or substitutions of the word appearing in the passage

- Omissions of words appearing in the passage

- Pausing on a word in the passage for 3-seconds or more

- Skipping an entire line of text appearing in the passage

- Reversing the order of words that appear in the passage

- Self-correcting a word that was mispronounced, substituted, or omitted

Scoring notation:

- Mispronunciations or substitutions of the word appearing in the passage

  Put a slash [/] through mispronunciations or substitutions

- Omissions of words appearing in the passage

  Put a slash with the letter o [/^{o}] through omissions

- Pausing on a word in the passage for 3-seconds or more

  Put a slash with the letter s [/^{s}] through pauses

- Skipping an entire line of text appearing in the passage

  ~~Put a line through the entire line of text and mark with the letter~~ ^{o}

- Reversing the order of words that appear in the passage

  Draw a rotated s through the two reversed words

- Self-correcting a word that was mispronounced, substituted, or omitted

Draw a circle around any words that was self-corrected

R-CBM - Scoring

To score the probes, determine where the student:

1) Determine the last word read – this is the word appearing before the bracket] and find the number that corresponds with this word. **THIS IS THE TOTAL NUMBER OF WORDS READ.**

2) If the student skipped an entire line of text, count up the number of words contained in the line and subtract this number from the total number of words read. **THIS IS THE REVISED TOTAL NUMBER OF WORDS READ.**

3) Count up the number of errors the student made. This includes any words with:

   a. a slash [/] for mispronunciations or substitutions = 1 error

   b. a slash with the letter o [/O] for omissions = 1 error

   c. an entire line of text ~~Put a line through the entire line of text and mark with the letter~~ O = 1 error

   d. reversed order of words = 1 error

   * ANY WORD WITH A CIRCLE IS NOT COUNTED AS AN ERROR (SELF-CORRECTED)

4) Subtract the number of errors from the total number of words read or the revised total number of words read (in the event that the student skipped lines). **THIS IS THE NUMBER OF WORDS READ CORRECT PER MINUTE.**

R-CBM - Scoring

Words highlighted in ==light grey== denote an omitted word; words highlighted in ==dark grey== denote all other errors.

Student 1
There ==once== were ==two== cats named ==Jillie== and Colette.   (9)
==Colette was a strange little cat because her days as==   (19)
a stray stunted her. Jillie was the ==best== cat ever.]   (29)

Total words read: 29-10=19
Words incorrect per minute: 6
Words correct per minute: 13

Student 2
==There== once were two cats named Jillie and ==Colette==.   (9)
Colette was ==a strange little cat== because her days as   (19)
a stray stunted her. Jillie was ==the== best cat ever.]   (29)

Total words read: 29-4=25
Words incorrect per minute: 4
Words correct per minute: 21

Student 3
==There== once were ==two== cats named ==Jillie and== Colette.   (9)
Colette was a strange little cat because ==her== days as   (19)
==a== stray ==stunted== her. Jillie was ==the== best cat ever.]   (29)

Total words read: 29
Words incorrect per minute: 8
Words correct per minute:21

Appendix D

Student Self-Rating Scale

| Excited | Don't Mind | Not Excited |

Summary of Capstone Project

Reading is a very important skill in our society but unfortunately, elementary-aged students are consistently failing to perform at grade-level. In other words, the majority of students who are in third grade cannot adequately read third-grade material. Research has linked reading ability with a variety of factors, including socioeconomic status, race, and familial factors such as parental involvement. Similarly, being an English Language Learner (someone whose primary home language is not English) is considered to be a risk factor for reading development.

Educators use a number of methods to evaluate how well a student can read. A standardized achievement test, similar to an IQ test, has limitations because of the nature of the assessment; the test can be tediously long for young students. Additionally, a student can only be assessed with a standardized achievement test infrequently, usually only once per year. Curriculum-based measurement in reading (CBM-R) is a tool used by educators to assess students' reading skills in a cost- and time-efficient manner. CBM-R can be administered more frequently than standardized achievement tests, which allows for educators to keep track of students' reading ability over time. This means that educators can check how much a student's reading has improved.

Despite the efficiency of CBM-R, the validity of the measure has come into question. Research has shown that students' reading performance, as measured by CBM-R, may vary based on contextual differences in the

administration of the assessment. One factor that may influence reading performance is who conducts the assessment. This means that a child who is assessed by his teacher may perform better than he would if he were to be assessed by a school psychologist. Ultimately, researchers have summarized this finding to mean that students' reading performance is best under the most "natural" conditions.

The fact that students' reading performance can vary based on contextual factors raises the question that informed the hypothesis of this study: what *else* can impact reading performance? Specifically, can a student's mood or disposition directly prior to each assessment predict how much a student improves over time?

Research assistants went into a local Syracuse City School District elementary school twice a week over a period of ten weeks. Each research assistant would remove one student from the classroom at a time and conduct the assessment. The assessment usually lasted between 5-7 minutes. First, the experimenter asked the student, "how do you feel about reading with me today?" and the student would answer, "excited," "not excited," or "don't mind." The experimenter would then conduct the reading assessment, which is meant to measure oral reading fluency, or words read correctly per minute. The dependent variable of the study was oral reading fluency slope, or how much a students' reading performance improved or regressed. A standard multiple regression analysis was used to determine whether the combined model of sex, socioeconomic status, and disposition significantly predicted the

variance in oral reading fluency slope. All children vary in how much their reading performance improved over the course of the study. The multiple regression was conducted to determine whether that variance could be predicted by sex, socioeconomic status, and disposition.

The findings of the study demonstrated that the combined model of sex, socioeconomic status, and disposition significantly predicted variance in oral reading fluency growth. The multiple regression analysis showed that sex significantly predicted variance in oral reading fluency growth on its own. However, disposition on its own did not significantly predict oral reading fluency growth. Disposition was positively correlated to oral reading fluency growth, which implies that there is a connection between how much a child's reading improves over time and his or her mood prior to the assessment. This connection may be significant for a number of reasons. These findings may indicate that a child performs better when they like to read versus when they don't like to read. One may assume that a child who enjoys reading will report a higher mood than students who don't enjoy reading when faced with a reading task. Another reason for this connection may be that a child's mood can interfere with the cognitive processes involved in reading, such as memory retrieval and attention.

This study opens the door for a variety of future research questions. For one, this study raises the question of whether mood is related to students' actual reading ability or if mood is considered to be a contextual factor that impacts the validity of CBM-R. Additionally, it may be interesting to

distinguish between mood and disposition. In this study, mood and disposition were used interchangeably. That is, the measure of disposition was used as a proxy for mood. However, it may be interesting to differentiate the two variables and ask the students both "how do you feel about reading with me today?" and "how are you feeling today?"

The link between mood and reading is something that should not be ignored. For one thing, poor reading performance in elementary-aged students has significant consequences for their future. For example, students who struggle with reading are more likely to drop out of high school. Considering the link between mood and reading growth demonstrated in this study, it is very important for parents and early educators to convey the process of reading as an enjoyable process for young children. If young children consider reading to be fun, they may be in a better mood when reading. Research has shown that children who like to read may read more often and are more likely to become better readers. However, if children consider reading to be boring or a chore, this may affect their mood and performance, which may reinforce their dislike for reading. Therefore, it is prudent to continue to conduct research on this subject to uncover more details about the nature of the relationship between mood and reading performance.