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Examining the effectiveness of implementing Orton-Gillingham reading intervention on student engagement for elementary students with challenging behaviors.

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EXAMINING THE EFFECTIVENESS OF IMPLEMENTING ORTON-GILLINGHAM READING INTERVENTION ON STUDENT ENGAGEMENT FOR ELEMENTARY STUDENTS WITH CHALLENGING BEHAVIORS

By

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DEDICATION

This dissertation is dedicated to my parents, Suzan and M. Dolan Evanovich, who continue to provide me with unconditional love and support.

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ABSTRACT

EXAMINING THE EFFECTIVENESS OF IMPLEMENTING ORTON-GILLINGHAM READING INTERVENTION ON STUDENT ENGAGEMENT FOR ELEMENTARY STUDENTS WITH CHALLENGING BEHAVIORS

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Providing support to students with challenging behaviors is a critical focus of classroom teachers' success. Finding ways to prevent and mediate academic and behavioral difficulties is a high priority area for both research and practice. The focus of this dissertation is on the effects of implementation of Orton-Gillingham Reading intervention strategies on active engagement for students with challenging behaviors. This study is a single-subject alternating treatments design across 3 elementary school classrooms, that examined the effects of increasing the rate of teachers' positive feedback and OTRs on students' engagement as measured direct observations for students identified with challenging behaviors. Dissertation study methods, results, future directions and recommendations are provided.

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CHAPTER I

INTRODUCTION

STUDENTS WITH DISABILITIES IN THE SCHOOLS

School can be difficult for all students, especially in the current climate of high stakes assessment and school-wide accountability systems where emphasis has been placed on increasing student achievement. According to the National Assessment of Educational Progress (NAEP) the rising pressure for academic achievement is spans across ethnicity, socioeconomic factors and disabilities (2013). The pressure of such accountability has become increasingly true for students with disabilities. According to the 36th Annual Report to Congress published in December of 2014, which reflects the most up to date data on students served under Part B in school year 2012, 8.4% of the school aged individuals 6 to 21 were being served under the Individuals with Disabilities Education Act (IDEA), meaning that of the 67,543,992 students enrolled in public schools in the 50 states roughly 5,699,640 students receive services under one of the 13 disability categories (USDOE, 2014). Of those students identified with disabilities, in the 2011-2012 school year a total of 63.9% graduated with a regular high school diploma, while 20.5% dropped out before completion (USDOE, 2014). For those students who are accepted to and attend any postsecondary educational settings, the outcomes are even bleaker. According to Newman et al. (2011), when comparing four-year college completion rates, students with disabilities had a completion rate of 34%, while their peers without disabilities had a 17% higher completion rate of 51%.

Research has demonstrated for decades that youth with disabilities continue to have significantly lesser outcomes when compared to their nondisabled peers (e.g.,

Blackorby & Wagner, 1996; Hasazi, Gordon, & Roe, 1985; Newman et al., 2011). Additionally, across the key areas of education, employment, and independent living, youth with disabilities are significantly less likely to (a) enroll in postsecondary education, (b) complete postsecondary programs even when they do enroll, (c) earn comparable wages when they are employed, (d) live independently, (e) marry, and (e) have a checking account or credit card (Newman et al., 2011).

The national outcomes for students with and without disabilities are similar to those being educated in Kentucky. In 2011, 681,987 students age 6 to 21 were enrolled in public educational services, 8% of those students or 84,407 individuals, were identified as students with disabilities (NCES, 2013). In Kentucky the average for all students graduating with a public school diploma in 2010 were 79.9% of all students (NCES, 2013) whereas for the 8% of students identified under IDEA Part B, 72.1% graduated, and 16.9% dropped out (USDOE, 2014). 19.7% of those students with disabilities proceed on to postsecondary education settings within one year of leaving high school (NCES, 2013).

Supporting students in the classroom can be difficult but is an especially arduous task in the case of those with disabilities. According to the U.S. Department of Education, in 2012 94.8% of all students with disabilities (ages 6 – 21) spent some part of their day in a general education classroom, and 61.5% of those students spent 80% or more of their day in these locations (USDOE-NCES, 2013). In Kentucky, 97.2% of all students with disabilities spent some part of their day in the general education classroom, and 71.8% of those students spent 80% or more of their day there (USDOE-NCES, 2013). As a consequence, students with a wide range of disabilities are educated within a

general education classroom environment. Students with disabilities being served in the general education classroom include specific learning disabilities (40.1%), speech or language impairments (18.2%), other health impairments (13.2%), autism spectrum disorders (7.6), intellectual disabilities (7.3%) and emotional disturbance (6.2%) (USDOE, 2014).

As these data show, continuing to support and create successful educational environments for students with disabilities has become a critical focus of both general and special education classroom teachers. Learning to create supports for students with challenging behaviors in order to help them achieve the same successes as their non-disabled peers is an even more problematic challenge.

Students with Emotional and Behavioral Disorders

Students identified with emotional and behavioral disorders (E/BD), as defined by the Individuals with Disabilities Education Act (IDEA, 2004) are those exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance:

> (a) an inability to learn which cannot be explained by intellectual, sensory, or health factors; (b) an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; (c) inappropriate types of behavior or feelings under normal circumstances; (d) a general pervasive mood of unhappiness or depression; and (e) a tendency to develop physical symptoms of fears associated with personal or school problems (CFR §300.7 (a) 9).

There are approximately 353,377 children and youth with emotional and behavioral disorders (E/BD) being served in our public and private educational systems (USDOE,

2014). At every grade level within schools these students receive services from general education teachers, special education teachers, and other staff to meet their academic and behavioral needs.

Among students identified with E/BD, estimates of the prevalence of academic and behavioral difficulties range from 25% to 97% (Reid, Gonzalez, Nordness, Trout, & Epstein, 2004; Nelson, Benner, Lane, & Smith, 2004). In total, less than 1% of students in U.S. schools receive special education services for E/BD (USDOE, 2014). Yet, researchers indicate that at any given time, up to 25% of U.S. students display the characteristics of those with ED and could potentially qualify to receive special education services (Forness, Freeman, Paparella, Kaufman, & Walker, 2012). In comparison to the 2012 national, state, and disability status data, in Kentucky 88.4% of students with E/BD (ages 6 – 21) spent some part of their day in a general education classroom, and only 50.3% of those students spent 80% or more of their day in the general education classroom (USDOE, 2014). This data tells the grim reality of education for our students with E/BD, and the need for early academic intervention to help increase the likely hood of success for these individuals.

Demographic Factors Among Students with E/BD. The demographic makeup of our schools is an important consideration. However, it is an even more important consideration for students with disabilities, and perhaps especially so for those identified with E/BD. Gender, ethnicity, and socioeconomic factors are inextricably related to these students. Emotional and behavioral disorders are generally grouped into two categories, externalizing and internalizing behaviors. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-V-TR) (American Psychiatric Association, 2013)

externalizing behaviors, which are often labeled as aggressive behaviors, include antisocial behavior, fighting, and high activity levels. In contrast, internalizing behaviors include anxiety, shyness, withdrawal, hypersensitivity, and physical complaints. Gender differences are apparent along these lines, with internalizing behaviors being more common in females (Hoffman, Powlishta, & White, 2004; Kazdin, 1995) and externalizing behaviors being more prevalent in males (Hoffman et al., 2004; Kazdin, 1995; McMahon & Wells, 1998).

In addition to gender differences, students with EB/D represent a wide range of ethnicities. In Kentucky, the ethnicities of students identified under E/BD identified as 71.1% White, 21.3% Black or African American, 2.1% Hispanic or Latino, and 3.3% two or more races (NCES, 2013). For students with challenging behaviors or those identified as E/BD there is a disproportionate representation of African American males across the United States and in Kentucky (USDOE, 2014; Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005). This data is in alignment with Kaufman et al. (2001), who found that African American with students with E/BD had a greater number of office discipline referrals than any other student ethnicity group (Skiba, Chung, Trachok, Baker, Sheya, & Hughes, 2014; Bradshaw, Mitchell, O'Brennan, & Leaf, 2010). African American students were also found to have the highest percentage of suspensions, expulsions, and retentions compared to other ethnicity groups (Aud, Fox, et al., 2010).

In addition to gender, and ethnic characteristics that contribute to the demographic factors of students, poverty, or socioeconomic status (SES) has been found to be an important predictive factor for students with E/BD (Skiba, Peterson, & Williams, 1997; Bratlinger, 1991; Nichols, 2004). SES is most often referred to in education as student

eligibility for free or reduced lunch. This indicator is based on the students' household income. In Kentucky, 56.6% of students who qualified for free or reduced lunch during the 2011-2012 school year (NCES, 2012). According to findings by Young, Sabbah, Young, Reiser, & Richardson (2010), students who experience poverty (or low SES) may have additional stressors that influence as-risk behavior. The issue of SES becomes increasingly important with the disproportionality of African American males who come from low SES homes being identified as E/BD (Skiba, et al., 2014; Skiba et al., 1997). Clearly, students identified as E/BD are more predictably from low-income and minority backgrounds; both issues that must be considered when addressing their problems.

School Outcomes for Students with E/BD. In addition to demographic disproportionality in school, students at risk for E/BD have significant academic deficits, which directly impact school outcomes. Students with E/BD also traditionally have low school attendance rates, which likely contribute to poor academic outcomes (Anderson, Kutash, & Duchnowski, 2001). Not surprisingly, post school outcomes for these students are bleak as only 51.1% graduate with a diploma and 38.1% drop out (USDOE, 2014). Unfortunately, even among those students with E/BD who have graduated with a diploma and performed at an academic level similar to that of students with other disabilities, teachers tend to rate their academic ability to be significantly lower (Lane, Carter, Pierson, & Glaeser, 2006).

Academic Outcomes for Students with E/BD. While students with E/BD are in the K-12 academic setting, academic deficits that ultimately contribute to their post-educational outcomes can be seen in standardized achievement tests that broadly measure reading and math (USDOE, 2014).

Mathematics Achievement and E/BD. In 2012, between 38.9% and 45.8% of students served under IDEA Part B (grades 3 - 8 and high school) participated in a regular assessment based on grade-level academic achievement standards with accommodations in math (USDOE, 2014). Of those students, the median percent proficient by grade level ranged from 19.2% (high school) to 44.8% (grade 3). In Kentucky, an average of 88% of students with disabilities participated in the regular administration of the statewide assessment in math in grades 4, 8, and high school (EDFacts, 2015). In Kentucky, of those students who participated in the general assessment for math, the 20% of students scored proficient in grade 4, dropping to 13% in grade 8 and 9% in high school (EDFacts, 2015). Clearly, mathematics instruction is an area in need of improvement when considering students with E/BD.

Reading Achievement and E/BD. National results of statewide assessments in reading are even more troubling, as are the assessment rates of those students with disabilities scoring proficient in Kentucky. Reading is a fundamental skill that is imperative for students to master not only for graduation but also as a predictor of quality post-schooling life outcomes. In 2012, between 37.4% and 41.5% of students who are served under IDEA Part B (grades 3 - 8 and high school) participated in a regular assessment based on grade-level academic achievement standards with accommodations in reading (USDOE, 2014). Of those students, the median percent proficient by grade level ranged from 29.6% (grade 6) to 39.6 (grade 3). In Kentucky, an average of 89% of students with disabilities participated in the regular administration of the statewide assessment in reading in grades 4, 8, and high school (EDFacts, 2015). Of those students, the 26% scored proficient in grade 4, dropping to 16% in grade 8 and 10% in high school

(EDFacts, 2015). In both math and reading, these deficits are a huge problem for educators and researchers alike.

Finding ways to prevent and mediate these problem behaviors has become a high priority area for research (Partin, Robertson, Maggin, Oliver, & Wehby, 2010). According to Partin et al. (2010), prevention of problem behaviors in schools involves the implementation of proactive strategies across multiple levels of support. Because of the vast impact a student's ability to read has on their outcomes, especially early on in their educational experience, the focus of such strategies for students with E/BD should be on evidence-based reading interventions.

Evidence Based Practices

The need for evidence based reading instruction is more than just best practices in education it is a legal mandate. No Child Left Behind (NCLB, 2002) legislation includes the Reading First initiatives, which requires that schools use "a learning system or program of reading instruction based on scientifically-based reading research" (NCLB 2002, Part B, Subpart 1, Section 1201 [c][7][A]). Additionally, the federal requirements define scientifically-based reading research that "applies rigorous, systematic and objective procedures to obtain valid knowledge relevant to reading development, reading instruction and reading difficulties (NCLB 2002, Part B, Subpart 1, Section 1208(6)(A)). This federal mandate applies to the to all students, as well as those with E/BD. The instructional reading practices that meet the legal mandate are those that are offer explicit instruction, high levels of student engagement, and increased teacher directed feedback and corrections.

Research has long supported the use of teacher directed instructional methods with high probability of success for all students. Hattie (1992) explains that such student success can be predicted by the teacher's use of specific instructional methods with the largest effect sizes. An effect size is measured looking at all relevant studies and calculating the difference between outcome measures at the beginning of an intervention or instructional method and the same measures at the end, and then dividing by the standard deviation of all. When the average effect is the same as the standard deviation it is an effect size of 1. The effect size provides a standard by which to compare the effectiveness of interventions (Lipsey, et al., 2012). In his syntheses of meta-analyses of the effects of teaching methods and their influences on student achievement, Hattie has shown that most instructional methods have at least a modest positive effect on achievement (Hattie, 1987, 1992, 2009). The average effect size of schooling in general is 0.40, which serves as the standard or benchmark in measuring effectiveness (Hattie & Timperley, 2007). That is, during a school year the average student will be seen to have grown 40% of one standard deviation in the academic areas that we normally measure. Research has identified strategies that provide effects much higher than the standard of 0.40 and also those with effects much lower (Hattie, 2009). In contrast, research has identified feedback as having an effect size of .73. When comparing different methods of instructional delivery, direct instruction has an effect size of .59 while whole language has an effect size of .06, lower even than simple exposure to content, which has an effect size of.36 (Hattie, 2009). While there are a lot of interventions that are effective, taking into consideration the effect size allows for the selection of the most effective strategy to ensure the timeliest success for students.

Direct Instruction

The effect size research largely supports what has been well-established in the research literature with regard to effective reading instruction. In 1967 Project Follow Through was created first as a social action program to extend Head Start into the primary grades, which then became an educational experiment to find the most effective methods for teaching reading, specifically those students who are disadvantaged. The results from Project Follow Through set important precedents, specifically demonstrating that Direct Instruction (DI) showed there can be "long-range, stable, replicable, and highly positive results with at-risk children of different types and in different settings" (Engelmann, 2007, p. 229), and that among reading interventions DI was the "only one that was effective with extremely low performers" (Engelmann, 2007, p. 230). Further, students in the DI condition outperformed every other reading model in overall achievement, problem solving, and self-esteem. However, like Hattie and Timperley's research, teacher educators have often ignored the results of project Follow Through (Watkins, 1997) and the comparative advantages of a DI approach to instruction. Still, the use of DI has proven to be highly effective for all students, especially for students with E/BD who are at-risk for such academic failures that are historically prevalent.

Direct Instruction is characterized by clear presentation of academic content, sequenced component and sub-component skills, teacher directed instruction, high rates of opportunities to respond (OTRs), systematic review of content, systematic feedback, initial and ongoing assessment, and learning concepts and skills to mastery (Becker & Gersten, 1982; Carnine, Silbert, Kame'enui, & Tarver, 2004). The DI process can be simply summarized as a model – lead – test sequence of instruction in which the teacher

first explicitly models, then leads students through guided practice, and finally assesses student knowledge through more independent and authentic activity (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008). The specific components of DI as it applies to an explicit instruction-reading program for students with challenging behaviors are detailed in Chapter 2.

CHAPTER II

LITERATURE REVIEW

While there are many different types of instructional strategies widely available, research has clearly identified those strategies with the greatest positive impact on student achievement. That is, some strategies simply provide greater probabilities for success than others. As a general finding, the most effective strategies are those in which the teacher is able to engage the student with the content of instruction (Berliner, 1990; Greenwood, Horton, & Utley, 2002; Hattie, 2009; Pianta, Stuhlman, & Hamre, 2002). According to Greenwood, et al. (2002) student engagement with the curriculum is facilitated by effective class-wide instructional practices. Actively engaging students with E/BD with these class-wide, evidence based instructional practices is imperative to their educational success and future outcomes. As previously discussed, the strategies for instruction with the greatest effect sizes are inherent parts of DI. In terms of enhancing student's active engagement, the DI model research has focused on two teacher behaviors in particular: (a) the provision of opportunities to respond, and (b) positive feedback.

Opportunities to Respond (OTR)

Teacher-provided opportunities for student response have a demonstrated positive association with students' academic and behavioral outcomes (Brophy and Good, 1986; Haydon, Mancil, & Van Loan, 2009; Partin, Robertson, Maggin, Oliver, & Wehby, 2010; Sutherland, Alder, & Gunter, 2003). Additionally, research has suggested that increasing academic OTR presentation rates increases student active engagement (Carnine, 1976; Davis & O'Neill, 2004; Haydon, Conroy, Scott, Sindelar, Barber, & Orlando, 2010; Haydon, & Hunter, 2011; Sutherland, Alder, & Gunter, 2003) and improves students'

academic outcomes for all students (Lambert, Cartledge, Heward, & Lo, 2006; Sutherland, Alder, & Gunter, 2003). Opportunities to respond are defined as teacher behaviors that elicit student responses (e.g., teacher questioning) related to the curriculum (Ferkis, Belfiore, & Skinner, 1997). Specifically, the teacher presents an OTR to one or more students, the student(s) respond in some specified manner, and the teacher provides feedback contingent upon student responses (Ferkis, Belfiore, & Skinner, 1997).

Response Modes

Students may respond to a teacher-provided opportunity to respond in unison or individually, depending on the type of OTR provided. Unison responses can be verbal (choral) or non-verbal (e.g., gestures, response cards, demonstrations) provided by the whole group or class of students. In contrast, individual responding occurs when one student is called upon and to individually provides a response - verbally, with gestures, or by using response cards.

Unison Responses. Unison responding is often referred to as the "call and response" technique (Heward, 2013) and involves the teacher presentation of a request or command to an entire group of students who are to chorally respond – either verbally or non-verbally (e.g., student hand raising; gesturing, response cards). Unison responding can be used as a means of review (e.g., in review of state capitols, ask what the capitol of Connecticut is and students verbally respond in unison "Hartford"), to check for understanding (e.g., student thumbs up or thumbs down response to question), or to provide practice of a new skills (e.g., students write their responses to a new skill such as learning how to write the letter "S" on individual white boards and hold up) (Heward, 2013). Students have reported choral (verbal and handraising) responding as a favored

method as they report believing that unison responses facilitate high levels of learning (Davis & O'Neill, 2004; Haydon & Hunter, 2011).

Another unison response modality is response cards. The use of response cards involves the use cards, signs, or items that are used to provide a response to the teacher's request (Christle & Schuster, 2003; Godfrey, Grisham-Brown, & Schuster, 2003). This can be done either by having pre-determined responses (e.g., the green card means yes, the red card means no) or by having the students write their own response on the response item and then old it up (e.g., write true or false on card and hold up). When using write-on response cards students mark their answers on blank cards and erase between questions. Once a teacher provides a question or opportunity to respond, the students may use a form of an erasable white board or laminated particleboard with which to write an independent response to then in unison display for the teacher (Davis & O'Neill, 2004; Lambert, Cartledge, Heward, & Lo, 2006). Preprinted response cards are also used in response to an OTR, however the student selects from a personal set of preprinted cards, for example yes/no, true/false, selected numbers or colors, vocabulary words, or any selected curricular related responses as appropriate (Heward, 2013).

Individual Responses. Lambert, Cartledge, Heward, and Lo (2006) define "traditional" individual student responses as, "...calling on only one student to answer the question while the rest of the class sits quietly and listens..." (p. 89). For each of the unison response examples detailed above the teacher could direct the opportunity to an individual student. Rather than asking the class to respond, the teacher can ask a specific student to do so. While this is generally not recommended as the sole strategy for delivering OTRs, there is some evidence that mixing individual OTRs in with more

frequent unison responding can enhance engagement across all students (see McKenzie & Henry, 1979; Haydon & Hunter, 2011). Still, a focus on individual students can be both aversive to students who are put on the spot and predictive of off-task behavior among students who are not being asked to respond.

Teacher-Directed Feedback

Feedback to students includes both verbal and gestural feedback, and can be delivered in either a positive or negative manner. Feedback is a natural teaching behavior that can easily be implemented in any classroom setting (Sutherland, Wehby, & Copeland, 2000) to increase student active engagement (Hattie & Temperley, 2007). Research has suggested that when used in concert with high rates of OTRs there are more effective opportunities to provide positive feedback to all students (Sutherland, Wehby, &Yoder, 2002). Often, those students who most need positive feedback are the least likely to engage in desired or appropriate behavior (Burnett, 2002). However, research has highlighted feedback as being a best practice in classroom management, even or perhaps especially for students with the most challenging of behaviors (Lewis, Hudson, Richter, & Johnson, 2004; Simonsen et al., 2008). While this has led to intervention studies seeking to increase teachers' rate of positive feedback (Reinke, Lewis-Palmer, & Martin, 2007), teaching provides the impetus for students to engage in the types of successful behaviors that prompt higher rates of positive feedback.

Positive Feedback

Positive feedback is one of the most powerful strategies a teacher can use to improve student engagement (Sutherland, et al., 2000; Hattie & Timperley, 2007) and manage student behavior (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008),

especially for students with the most challenging behaviors (Lewis, et al., 2004; Simonsen et al., 2008). Positive feedback has been associated with increasing student achievement as measured by engagement, and a decrease in disruptive behaviors (Apter et al., 2010; Brophy, 1981; Gable, Hester, Rock, & Hughes, 2009, Matheson & Shriver, 2005). Most often referred to as praise when delivered verbally, positive feedback serves to reinforce desired behavior – which in turn can serve to decrease disruptive behaviors, and increase time engaged with instruction (Pisacreta, Tincani, Connell, & Axelrod, 2011). While positive feedback has been identified as an evidence-based practice, it also has been widely cited as occurring infrequently in school settings, especially for students with identified challenging behaviors (Gable, et al., 2009; Kerr & Nelson, 2006; Scott, Anderson, & Alter, 2011; Stichter, Lewis, Whittaker, Richter, Johnson, & Trussell, 2009; Walker, Ramsey, & Gresham, 2004).

Teacher provided positive feedback includes indicating approval or correctness by way of verbal and non-verbal responses to students' academic or behavioral performance (Hattie & Temperley, 2007). Positive feedback can be indicated by gestures (e.g., thumbs up, or head nod of approval), facial expressions (e.g., smile, or excitement), or most often, with specific verbal praise (e.g., stating to the student "Yes! Two plus four equals six, good job").

Positive Feedback Rate. Increased rates of positive feedback are associated with decreases in the frequency of student off-task behavior and increases in active engagement with instruction (Apter, Arnold, & Swinson, 2010; Sutherland, Wehby, & Copeland, 2000). Englemann and Carnine (1991) and Trussell (2008) highlight the necessity of instructional feedback being delivered consistently after a desired or

appropriate student response. In fact, inconsistent or infrequent use of positive feedback can have limited or even negative effects on student behavior. While the optimum rate of praise has not been established, studies have shown that teacher praise rates are extremely low - sometimes less than once per hour (Hirn & Scott, 2014). As with other effective teacher strategies, positive feedback rates have been shown to be even lower for students with EBD (Hirn & Scott, 2014; Shores, Jack, Gunter, Ellis, DeBriere, & Wehby, 1993).

Positive to Negative Feedback Ratio. Negative feedback is another use of teacher-directed interaction with students, however, the manner in which negative feedback is delivered is important. Reprimands and corrections (i.e., re-teaching) are two widely known mechanisms of negative feedback (Nelson & Roberts, 2000). As has been repeatedly stressed in the literature, the continued use of negative feedback for an undesirable behavior is an indication that instruction is not working (Gunter & Coutinho, 1997; Gunter, Denny, Jack, Shores, & Nelson, 1993; Hattie & Timperley, 2007; Scott, Anderson, & Alter, 2011). While feedback of all kinds is necessary in learning, to see greater student engagement teachers must focus on creating instructional environments that promote more positive than negative feedback (Gunter & Coutinho, 1997; Gunter et al., 1993; Hattie & Timperley, 2007; Apter et al., 2010; Gable et al., 2009; Sutherland et al., 2000). Throughout the literature there is general consensus that the ratio of positive to negative feedback should be in the area of three or four to one (3:1 - 4:1). That is, instruction is most effective when the teacher provides three or four positive feedback statements or gestures for every one negative feedback statement or gesture. However, no empirical basis for these recommendations has been reported. Instead, the only data that appears in the literature comes from the areas of Psychology and Counseling and is

generally supportive of ratios between three and five to one (see Fredrickson & Branigan, 2005; Gottman, 1994).

That ratios of positive to negative feedback have been far less than the lowest recommended 3:1 is well-documented (Scott, Alter, & Hirn, 2011), a fact that is even more dramatic when considering students with EBD. Gorman-Smith (2003) studied students with identified behavioral challenges and found negative feedback was almost 20 times more likely than positive feedback. Logically, if teachers are consistent with their application of feedback, higher ratios of positive to negative ratios would be an indication that students are maintaining success. Further, lower ratios or ratios indicating positive feedback occurring more frequently than positive feedback would be an indication that instruction was not working. Sadly, such "upside down" ratios have been observed in high schools and in classrooms with students with EBD (Hirn & Scott, 2014).

Both OTRs and positive feedback are discussed in the literature, specifically for students with challenging behavior or EBD, as methods to increase occasions of desired student behavior in the classroom, which therefore increases student active engagement.

Teachers' Engagement of Students with E/BD: A Review of the Literature

In order to better understand the current and seminal research with regard to teacher engagement of students with challenging behaviors or identified with EBD, a review of the literature was conducted. This systematic review of computer-based searches for relevant literature was conducted via the Educational Resources Information Center (ERIC), EBSCOhost, and PsycINFO, using a combination of the following descriptors in a Boolean search method*:* (1) *teacher behaviors; total student engagement;*

teacher directed opportunities to respond for students with EBD; choral responding; individual responding; (2) *teacher behaviors; total student engagement; positive feedback for students with challenging behavior and/or EBD.*

Overall criteria for inclusion required that all selected studies: (1) be published in a peer-reviewed journal prior to January, 2015; (2) take place in an elementary, middle, high, or specialized school (K-12); (3) include some form of quantified participant behavior (teacher and student); and (4) include students with challenging behaviors (off-task) who are at risk-for or identified as EBD. Because of the very limited number of studies resulting from the original search which restricted student populations to only those identified with EBD, the search terms were expanded to include students who have been identified with challenging behaviors as well as those who are at-risk for or who have been identified with EBD. Even this widening of the search terms yielded only 17 total studies, nine on OTR (see Table 1 for summary) and eight on positive feedback (see Table 2 for a summary). This small number is an evidence of the lack of research in this general area. Summaries of findings from these identified studies are presented first for OTR and then for positive feedback.

Opportunities to Respond (OTRs)

Across the nine identified OTR studies, both the rate and mode of OTR delivery appear to be significant factors in predicting effect. These factors are further described below.

Rate. The OTR rate refers to the frequency with which a teacher delivers these opportunities to students, divided by total time within which it occurred. Thus, the teacher who delivers 5 OTRs across a period of 2 minutes could be said to be using OTRs

at a rate of (5/2) 2.5 times per minute. As was mentioned with regard to OTRs in general, there is little in the research to specify either minimum or optimum rates for different students, subjects, or conditions. In 1987 The Council for Exceptional Children (CEC, 1987) published a document on effective instruction that recommended 4-6 OTRs during acquisition learning and 8-12 during fluency building. However, these recommendations do not appear to be based on any empirical evidence.

With regard to students identified with challenging behavior or EBD, four OTR studies met the review criteria and provide evidence of the importance of rate. First, Carnine (1976) reported that increasing the rate of OTRs, increased student engagement when comparing slow-rate to fast-rate presentation with two elementary students. Similarly, West and Sloane (1986) reported comparable results when comparing slow-rate to fast-rate presentation of OTRs. They found that the fast-rate condition decreased off-task behavior for five elementary students identified with EBD. Similar findings come from Sterling, Barbetta, Heward, and Heron (1997) who studied five students identified as receiving special education services in the elementary setting. They reported that increasing active student responding versus passive responding showed increases in academic achievement for students with challenging behaviors.

Sutherland, Alder, and Gunter (2003) conducted a study in an elementary special education classroom to assess the effectiveness of increasing the rate of OTRs with nine students identified with Emotional and Behavioral Disorders. They set a goal of three OTRs per minute and provided teachers with daily performance feedback. From their results it was reported that increases in the rate of presentation were related to increases in total engagement (on-task behavior), decreases in disruptive behavior, and an increase

in correct responses. Similarly, according to Carnine (1976), increasing the rate of presentation of OTRs resulted in decreases in both off-task and disruptive behavior.

Descriptive information from all four studies indicate that desired student outcomes occurred with the presentation of approximately 3 to 5 OTRs per minute. Further, all four provided evidence of a connection between OTRs and student engagement. A clear limitation among these studies is the small sample sizes (Carnine N = 2, West & Sloane N = 5, Sutherland et al N = 9, Sterling et al N=5). Such small numbers critically impede generalization of the findings.

Mode. The mode of OTR delivery included both group (unison) and individual focus as well as a range of student responses. Of the studies reviewed, four focused on the effects of individual student vs. unison responding. In addition, student responses included single-student individual responding, choral responding, presentation of a response card, and/or a polling system referred to as a student response system.

Lambert, Cartledge, Heward and Lo (2006) compared the use of single-student responding and unison write-on response cards for nine fourth-grade students identified with challenging behaviors during math instruction. Results showed that all nine target students were less disruptive, more engaged with math instruction, and answered more responses correctly during the response card condition than in the single-student condition. Davis and O'Neill (2004) also compared the use of single-student responding and unison response cards, reporting similar results for the four students included in the study. Haydon and Hunter (2011) compared the effects of single-student responding to unison handraising for two middle school students, one target with high levels of off-task behavior and one typically achieving peer. They reported that there was an increase in

on-task behavior and engagement (as measured by correct response and test score percentages) during the unison handraising condition.

Haydon, Conroy, Scott, Sindelar, Barber, and Orlando (2010) compared three modes of OTR: individual, choral and mixed for six students with behavioral challenges during reading. Results indicated that for five of the six students, the lowest rate of disruptive behavior (described as behaviors that would qualify students as at-risk for EBD) was observed during the mixed condition, followed by choral responding and then individual responding. Choral responding was, however, reported as being a more effective strategy for these students in decreasing both disruptive and off-task behaviors. Active student responding (student engagement) was reported to be equal across both choral and mixed responding.

Another approach to individual student responding is the Student Response System (SRS). This strategy involves a polling system that students use with a small handheld device to respond to multiple-choice and true-false questions (Blood, 2010). Results showed an increase in rates of responding when access to the device was given to five high school students with EBD during history instruction. However, although the students responded more frequently with a personal SRS device, it did not result in an increase in student engagement. Instead, the device appeared to provide students a quick means of responding before returning to their off-task behavior. Thus, the evidence for using SRS with students with challenging behavior is limited in terms of supporting increased total engagement or academic achievement.

As evidenced by the preceding five studies, the mode of OTR has shown variable effects on student engagement. Choral and card responses (both unison and individual)

had positive effects on student engagement for students with challenging behaviors or EBD in middle and elementary school during math and/or English instruction (Haydon, Conroy, Scott, Sindelar, Barber, & Orlando, 2010; Haydon & Hunter, 2011; Lambert, Cartledge, Heward, & Lo, 2006; Davis & O'Neill, 2004). Although the relationship between SRS and student engagement is not fully supported, positive effects for high school students with EBD during history instruction were noted. Of course, more empirical support is needed (Blood, 2010).

In sum, the available literature regarding OTRs and students with or at risk for identified behavioral challenges shows that frequent opportunities to respond are generally associated with an increase in student engagement and on-task behavior as well as decreases in disruption. A limitation across all identified studies is the small sample sizes (Lambert et al N = 9, Davis & O'Neill N = 4, Haydon & Hunter N = 2, Haydon et al N = 6, Blood N = 5). Such small numbers significantly inhibit the generalizability of these results.

Table 1.

Opportunities to Respond

Study	Design	Setting	Student Characteristics	Student Criteria	Teacher Characteristics	Results
Blood, 2010	Single-subject ABABC	High School Special education self-contained classroom American History	*n* = 5 2 9th grade boys 2 10th grade boys 1 11th grade girl 2 students with EBD 2 students with OHI 1 student with	Teacher identified students: - Frequently off-tsk - Frequently distracted during class - Low response rates during class	*n* = 1 No specified years of experience Special education certified Self-contained	*Mode of OTR - SRS* Increases in response rates, students responded more frequently to formal questions when the Student Response

			ASD	- Low participation rates during class	classroom for students with EBD	System (SRS, e.g., polling) was used than not.
Carnine, 1976	Single-subject ABABAB	Elementary School General education Reading small-groups	*n* = 2 1 1st grade boy 1 1st grade girl Identified with challenging behavior No identification category specified	Teacher identified students: - Off task "too often" - Below grade-level in reading	*n* = 2 Teacher 1 no specified years of experience, special education certified Teacher 2 was a pre-service teacher	*Rate of OTR* Decreases in off-task behavior for both students when OTRs were presented fast. Both students increased in participation and correct responses

						with fast presentation
Davis & O'Neill, 2004	Alternating treatments & ABAB	Middle School Special education self-contained English class	*n* = 4 2 7th grade girls 1 8th grade boy 1 8th grade girl Identified with challenging behavior 3 students with LD 2 ESL students 1 student with TBI	Teacher identified students: - Low levels of active responding - High levels of off-task behavior	*n* = 1 No specified years of experience No specified certification Note: First author was the classroom teacher	*Mode of OTR, Response Card* Higher levels on average of correct academic responding using response card conditions verse hand raising.

Haydon & Hunter, 2011	ABCBC	Middle School General education English class	*n* = 2 2 7th grade boys - 1 with off-task behavior - 1 typical peer Identified with challenging behavior No identification category specified	Teacher identified students: - 1 with chronic off-task behavior - 1 typical peer	*n* = 1 4 years teaching experience English grades 5 – 9 certification	*Class of OTR* *Single-student vs Unison Responding,* *Teacher Praise rates* Increased on-task behavior, academic achievement and teachers rates of OTR and praise.
Haydon, Conroy, Scott, Sindelar,	Alternating treatments	Elementary School	*n* = 6	Identified using the Systematic	*n* = 6	*Class of OTR,* *individual,*

Barbetta, & Orlando, 2010		General education Language Arts class	5 2nd grade boys 1 2nd grade girl Identified with challenging behavior No identification category specified	Screening for Behavior Disorders (SSBD). SSBD completed by the teacher for inclusion based on high rates of disruptive behavior for at least 1 month.	*M* of 3 years teaching experience No specified certification	*choral, and mixed responding* Mixed responding condition had decreased off-task and disruptive behaviors, and increased active responding
Lambert, Cartledge,	ABAB	Elementary School	*n* = 9	Teacher identified	*n* = 2	*Mode of OTR, response card vs*

Heward, & Lo, 2006		General education Math class	4 4th grade boys 5 4th grade girls Identified with challenging behavior No identification category specified	students: - Most disruptive - Least attentive - Worst performing in math	Both teachers with about 2 years experience Both elementary education certified	*single student* RC condition had a decrease in disruptive behavior and increase in frequency of academic responses
Sterling, Barbetta, Heward, & Heron, 1997	Alternating treatments	Elementary School Special education self-contained Small group,	*n* = 5 3 4th grade boys 2 4th grade girls Identified with challenging	Students who were included were mainstreamed in the 4th grade health class	*n* = 2 No specified years of experience	*Rates of OTR, active responding vs. on-task instruction* Active student

		Health class tutoring	behavior 1 student with LD 4 students with DD		No specified certification Note: First author was the classroom teacher	responding had an increase in academic achievement (mean scores)
Sutherland, Alder, & Gunter, 2003	ABAB	Elementary School Special education self-contained Math class	*n* = 9 All students between 8 - 12 years old 8 boys 1 girl	Students were included because they were in the self-contained special education class for students with EBD	*n* = 1 2 years teaching experience No certification specified	*Rates of OTR* – Increased OTR condition (at goal) increased on-task behavior and students mean rate and

			All 9 students with EBD			percentage of correct responses, No functional relationship with teacher praise rates.
West & Sloane, 1968	Multi-element	Elementary School Special education self-contained summer school Small group instruction in	*n* = 5 All in the 1st grade 4 students with EBD 1 student with	Teacher identified students: - Disruptive behaviors (e.g., out-of-seat) - Socially undesirable	*n* = 1 No specified years of experience No specified certification	*Rates of OTR (fast/slow) &* *Specific praise statements* Overall mixed findings for decreases in disruptive

	reading, math, spelling, and functional skills	ID	behaviors (e.g., physical aggression towards adults and peers)	behaviors, and increasing correct responding, no functional relationship was found with rates of OTRs or contingent praise.

Positive Feedback

Teacher-directed feedback is one of the antecedent strategies identified as producing positive effects on student engagement in the larger literature on engagement (Gable, Hester, Rock & Hughes 2009; Hattie, 2009). Of the eight studies matching the criteria and reviewed, two major variables of teacher-directed feedback statements became apparent: (1) the frequency with which they are provided (rate) and (2) the ratio of positive to negative feedback. Across the eight identified studies on positive feedback, the rate of delivery and ratio of positive to negative feedback appear to be significant factors in predicting effect. These factors are further described below.

Rate. The positive feedback rate refers to the frequency with which a teacher delivers this feedback to students, divided by total time within which it occurred. Thus, the teacher who delivers 8 positive feedback statements across a period of 3 minutes could be said to be using positive feedback at a rate of (8/3) 2.67 times per minute. Of the studies reviewed, six provide evidence of the importance of rate of positive feedback.

Allday, Hinkson-Lee, Hudson, Neilsen-Gatti, Kleinke, and Russel (2012) provided a simple professional development (PD) session for teachers to increase their use of positive feedback (i.e., behavior-specific praise) for seven students identified with or at-risk for EBD (two elementary schools, one middle school). As a result of the PD there was a reported increase in the rate of teacher provided positive feedback and a concurrent increase in on-task behavior (i.e., student engagement) for the target students. Similarly, Matheson and Shriver (2005) examined the effects of a PD intervention on increasing teachers' rates of positive feedback in the elementary school setting for students with low rates of compliance. They reported that as positive feedback rates

increased there were general increases in student compliance (on-task behavior). A limitation of this study, however, was that the rates across conditions were not stable across teachers; therefore, while the results are positive, additional support is needed to further assess the strength of the relationship.

Performance feedback as a means of PD is another way research has examined the teacher's provision of positive feedback. Simonsen, Myers and DeLuca (2010) compared the effects of training and performance feedback on three teacher behaviors: prompting social behavior, academic OTRs and positive feedback (i.e., specific praise). Results from the three alternative education teachers of students with EBD included in the study indicated a functional relationship between performance feedback and an increase across all three-teacher behaviors. A clear limitation for this study was that there was not an explicit measure for student behavior. Similarly, Duchaine, Jolivette and Fredrick (2011) used teacher coaching and written performance feedback for high school mathematics teachers on their use of positive feedback (i.e., behavior specific praise), OTRs, and the percentage of their students' on-task behavior. They found that with the use of teacher coaching and by providing written performance feedback there was an increase in the number of positive feedback opportunities provided to the students. However, because of the random sampling of 15 students per data-collection session of on-task behavior, minimal increases were observed. Still, this study provides evidence that performance feedback is associated with a limited but positive increase in student on-task behavior (Duchaine, Jolivette & Fredrick, 2011).

Hawkins and Heflin (2011) describe the use of video self-modeling for increasing positive feedback. However while the reported rates of positive feedback increased with

the intervention, there were no measures regarding student effects. Reinke, Lewis-Palmer, and Martin (2007) evaluated the effects of visual performance feedback (VPF) on increasing teacher-provided positive feedback (i.e., behavior specific praise). Results indicated that with the presentation of VPF, teacher-provided positive feedback increased for all students in the three third grade general education classrooms in the study. Additionally, results indicated that there was a decrease in disruptive behavior for the six target students with challenging behaviors, however, the decreases were minimal, therefore further research is needed to assess effects of VPF on decreasing disruptions.

As evidenced by the preceding studies, there does appear to be compelling evidence supporting a connection between increasing the rate of positive feedback and student engagement (i.e., increased on-task and/or decreased disruptive or off-task behavior) when teachers are provided with training and/or performance feedback. However, much of this is due to the fact that studies have not adequately measured student behavior as a dependent variable.

Ratio. The feedback ratio refers to the ratio of positive to negative feedback delivered by the teacher. Thus, the teacher who delivers 8 positive and 2 negative feedback statements could be said to be using positive feedback at a ratio of (8/2) 4:1. Of the studies meeting criteria for inclusion and reviewed, two provide evidence for the importance of ratio. Myers, Simonsen and Sugai (2011) applied a three-tiered response to intervention system of to increase teachers' use of positive feedback. Using a continuum of supports, four middle school teachers received training support based on their data after core or universal level training. Results indicated that when teachers receive PD specific to their need, the ratio of positive to negative feedback increased

along with students' on-task behavior. A limitation is that while the classes had students who were identified as having challenging behaviors, each observation targeted three randomly chosen students. Thus, once again it is not possible to make strong statements regarding the relationship between teacher behavior and the behaviors of students with challenging behavior.

Pisacreta, Tincani, Connell and Axelrod (2011) examined the effects of increasing the ratio of teachers' positive feedback (i.e., praise) to behavior correction rates of disruption on students with challenging behaviors. Researchers provided modeling and performance feedback to three middle school teachers (mathematics, science and literacy) in order to increase the ratio of positive feedback to correction to at least a 1:1. Results indicated that when the ratio was 1:1 or greater, across all three classrooms the disruptions decreased. The greatest decrease in disruptions for students with challenging behaviors was reported during the performance feedback condition in which the teachers averaged 1:1 ratio. While far short of the often-recommended rate of three or four to one, data presented by Pisacreta, Tincani, Connell, and Axelrod (2011) provide support for the positive effects of even an equal balance of praise and feedback. However, it must be noted that in this study the ratio of 1:1 still represented an increase over baseline rates in which students were presumably receiving ratios of feedback that were heavier on the negative than positive. It remains uncertain how higher ratios of positive to negative feedback would have affected the students.

While research indicates positive feedback as a beneficial instructional tool, the ratio of positive to negative feedback in practice is under-studied specifically for students

with challenging behaviors and EBD, making the it difficult to say there is a relationship to a specific positive to negative feedback ratio linked to increasing student engagement.

Table 2.

Positive Feedback

Study	Design	Setting	Teacher Characteristics	Student Characteristics	Intervention & Results
Allday et al., 2012	Modified multiple baseline	Elementary School General education Circle/center time Grades K, 1, 2, & 6	*n* = 4 General elementary education certified	*n* = 7 Students identified with or at risk for EBD 5 – 12 years old	Teachers increased their rates of praise with performance feedback, and student engagement increased.
Duchaine, Jolivette, & Fredrick, 2011	Multiple baseline	Alternative High School Inclusive classroom 9th grade Math class	*n* = 3 2 General education 1 Special education	*n* = 62 Identified with disabilities, not	All teachers increased rate of praise during intervention. Mixed

			certified 2 – 8 years experience	otherwise specified, ages 15 – 17 Identified with challenging behavior	outcomes for student engagement across the classes.
Hawkins & Heflin, 2011	Multiple baseline, embedded withdrawal	Alternative High School 3 Self-contained classrooms for student with EBD	*n* = 3 Special education certified 2 – 7 years of experience	Not specified Identified with challenging behavior	All three teachers increased praise rates during intervention, one maintained during withdrawal.
Matheson & Shriver, 2005	Multiple baseline	Elementary School 3 General education classrooms	*n* = 3 General elementary	*n* = 3 Students identified	Teachers increased praise during intervention

		Reading and Math class Grades 2 and 4	education certified	with low levels of compliance	conditions. Increase in student engagement, compliance and behavior.
Myers, Simonsen, & Sugai, 2011	Multiple baseline	Middle School Special education self-contained, inclusion, and general education Grades 5 – 7	*n* = 4 1 self-contained special education 3 general education certified 0 – 11 years experience	Not identified	All teachers increased their rate of praise; some needed more intensive tiers of supports, overall student behavior improved.
Pisacreta, Tincani,	Multiple baseline	Middle School	*n* = 3	*n* = 15 – 20 per	All teachers praise

Connell, & Axelrod, 2011		General Education Math, Science, and Literacy class	All general education certified 2.5 – 11 years experience	class Not otherwise specified Identified with challenging behavior	ratio to 1:1 or higher during intervention. Decrease in student disruptive behaviors.
Reinke, Lewis-Palmer, & Martin, 2007	Multiple baseline	Elementary School General Education 3rd grade	*n* = 3 All 3rd grade general education certified 4 – 29 years experience	*n* = 12 6 teacher identified with disruptive behavior 6 comparison peers	Teachers increased praise for all students when students were engaged, decrease in disruptive behavior for all students.

Simonsen, Myers, & DeLuca, 2010	Multiple baseline	Alternative School for students with EBD	*n* = 3 All special education certified 13 – 16 years experience	3 classrooms with 5 – 7 students each Alternative school for students with EBD	Teachers improved the rates of prompts, OTRs and praise with performance feedback.

In summation, while the literature at large has generally supported the use of OTRs and positive feedback, the evidence base regarding students with or at risk for EBD is promising but limited. The studies reviewed herein examined teacher-provided strategies as applied during Direct Instruction, typically in students' acquisition of reading skills (Carnine, Silbert, Kame'enui, & Tarver, 2010; Flores & Ganz, 2009). Implications of the connection between Direct Instruction or explicit instruction and engagement are addressed below.

Effective Reading Instruction

As has been discussed, the U.S. Department of Education requires schools to use research-based practices to teach reading. The need for Direct Instruction (DI) as outlined in chapter 1, applies to explicit instruction as well. Explicit, or direct, instruction is "a systematic method of teaching with emphasis on proceeding in small steps, checking for student understanding, and achieving active and successful participation by all students" (Rosenshine, 1987, p. 34). DI is characterized by clear presentation of academic content, sequenced components and sub-components of skills, teacher supported instruction, high rates of opportunities to respond (OTRs), systematic review of content, systematic feedback, initial and ongoing assessment, and student mastery of concepts and skills (Becker & Gersten, 1982; Carnine, Silbert, Kame'enui, & Tarver, 2004). Rosenshine (1986) reviewed research on teacher effectiveness variables and out of that review found ten common components of teacher effectiveness in direct instruction. The findings are reported in Table 3.

Table 3.

Components of direct instruction

1. Begin a lesson with a short statement of goals
2. Begin a lesson with a short review of previous, prerequisite learning
3. Present new material in small steps, with student practice after each step
4. Give clear and detailed instructions and explanations
5. Provide active practice for all students
6. Ask many questions, check for student understanding, and obtain responses from all students
7. Guide students during initial practice
8. Provide systematic feedback and corrections
9. Provide explicit instruction and practice for seatwork exercises and, where necessary, monitor students during seatwork
10. Continue practice until students are independent and confident

Note. Rosenshine, 1986, p. 60-61.

While the features listed in Table 3 provide an overview of general procedures, Direct Instruction (capital D and capital I) refers to a specific set of practices that represent an empirically based technology for planning and presenting instruction. Engelmann & Colvin (2006) describe seven axioms or principles of DI practices: presentation of information, tasks, task chains, exercises, sequences of exercises, lessons, and organization of content. Presentation of information begins with considerations of clarity and precision with the introduction of key rules and a range of examples to highlight the difference between proper and improper consideration of the rule. Tasks include teacher presented opportunities for students to respond within the lesson. Task chaining involves teacher-delivered requests that set the student up to answer questions across a range of examples to assess for understanding. This understanding is critical before moving to the exercises stage wherein students are provided with more authentic examples and larger tasks. This culminates in exercise sequences that begin to combine skill sets and set the occasion for introduction of new skills. The lesson component refers to the daily instructional periods that typically contain four to ten exercises. Finally, organization of content refers to how examples are grouped and sequenced during instruction.

Direct Instruction is the most well-researched and effective method of teaching reading, having demonstrated clearly superior results in achievement, problem solving, and student esteem when compared head-to-head with other methods (Adams & Engelmann, 1996; Engelmann, Becker, Carnine, & Gersten, 1988; Gersten, Becker, & Heiry, 1984; Watkins, 1995). Further, the evidence is clear that components of DI, as applied to explicit instruction, are an effective means of teaching a range of academic and

social content and, while effective across all types of students, it is especially effective with students with identified academic and behavioral deficits (Adams & Engelmann, 1996; Carnine, Silbert, Kame'enui, & Tarver, 2010).

Orton Gillingham Reading Instruction

Orton-Gillingham Reading Instruction (OG) is an explicit instruction program, which includes many of the key components of DI. For example, OG, teaches each sound and symbol in isolation as a discrete unit until the sound and symbol can be manipulated to create words and sentences independently. In addition, lessons are presented in a sequential format, providing students with review and practice, which allows them to decode (read) and encode (spell). As described, OG incorporates many aspects of DI: it provides clear presentation of academic content, sequenced components and sub-components of skills, teacher supported instruction, high rates of opportunities to respond (OTRs), systematic review of content, systematic feedback, initial and ongoing assessment, and student mastery of concepts and skills. The components of OG include those described by Engelmann & Colvin (2006) as the seven axioms or principles of DI practices: presentation of information, tasks, task chains, exercises, sequences of exercises, lessons, and organization of content. However, OG is more than a DI program, because OG has all of the DI components as well as the addition of multisensory components. An important aspect of the OG instructional program is the addition of kinesthetic learning activities (e.g., sand trays for finger letter tracing, letter writing on alternative surfaces to feel the letter movement in creation) which are incorporated into all of the 5-parts of the lesson sequence. This is later described in detail as it is referred

to as the *Language Triangle*, of auditory, visual, and kinesthetic/tactile learning elements, which combined create the lessons of OG.

Orton-Gillingham incorporates the four aspects identified as the most effective components of reading instruction by the National Reading Panel which was created by Congress in 1997 and tasked to assess the effectiveness of reading instruction approaches. The panel created "The Report of the National Reading Panel: Teaching Children to Read" (NRP, 2002). The report concluded that in-order for students to become sufficient readers they must be taught (1) phonemic awareness skills – ability to make the sounds that make up our spoken language; (2) phonics skills – understanding that there are relationships between letters and sounds; (3) fluency skills – ability to read with accuracy, speed, and expression; and (4) application of reading comprehension strategies to understand what they read (NRP, 2002).

Orton-Gillingham Reading Instruction can be described as a comprehensive, systematic, explicit, sequential, synthetic and multisensory phonics-based approach to teaching all aspects of reading and spelling that can be modified for individual or group instruction at all reading levels (Lyon & Liuzzo, 2003; Ritchey & Goeke, 2006). Research that supports the academic increase for students using Orton-Gillingham includes a two-year longitudinal study that resulted in increased academic success of students instructed with Orton-Gillingham Reading instruction. This included significant growth in phonemic awareness, word identification, word attach, speaking and syntax (Hook, Macaruso, & Jones, 2001). Similarly, Litcher & Roberge (1979) found that when comparing OG instruction to a controlled group using the basal-reading instruction for first grade students at-risk for reading problems, over two years those receiving OG

scored superior on standardized reading assessments to those in the controlled group. In addition to overall reading improvement, growth in phonological awareness, decoding, and comprehension was reported to significantly improve with the use of OG instruction over a controlled reading instruction for early Elementary students at-risk for reading problems in the general education classroom (Joshi, Dahlgren, & Boulware-Gooden, 2002; Foorman, Francis, Winikates, Mehta, Schatschneider, & Fletcher, 1997; Oakland, Black, Stanford, Nussbaum, & Balise, 1998).

Teaching sessions are action oriented with auditory, visual, and kinesthetic/tactile learning elements, often referred to as the *Language Triangle,* reinforcing one another (Ritchey & Goeke, 2006; Lyon & Liuzzo, 2003). In this multisensory phonics technique, students first learn the sounds of letters, and then build these letter-sounds into words using visual, auditory, and kinesthetic associations to help remember the concepts. Students learn skills that become progressively more complex, beginning with instruction in phonemic awareness wherein they learn how to listen for, manipulate, and identify individual phonemes in words. Once students learn and master the associated skills of phonemic awareness, they learn which letters or groups of letters represent different phonemes and how those letters blend together to make simple words. Next, students learn the six types of syllables found in the English language followed by an introduction to sounds that have multiple spellings. Finally, they learn morphology, roots, and affixes to increase their vocabulary, spelling of new words, and comprehension of text (Gillingham & Stillman, 1960). While originally developed for individuals with dyslexia, OG has adapted to class-wide implementation to mediate the development of reading disabilities (Gillingham & Stillman, 1997; Lyon & Liuzzo, 2003).

Orton-Gillingham reading instruction provides explicit instruction in phonology and phonological awareness, sound-symbol correspondence, syllables, morphology, syntax, and semantics (Clark & Uhry, 1995). The OG model involves teaching language components systematically and cumulatively, by requiring mastery and review before students move on to the next component of language in a preset-sequence that can be individualized to the needs of each student (Clark & Uhry, 1995). For example, a student must first learn the sounds (phoneme) that are associated with the letters in the word *heart* separately, prior to being able to blend them together to form the word *heart*. As a possible individualization for students who may struggle with the concept of blending, students may need to first master all of the letter phonemes and then learn how to blend three-letter words to master the technique of blending. Further, OG incorporates frequent individual and unison OTRs and positive feedback across lessons. Each lesson is designed for 30 minutes and includes one or more of the following five-part lesson plan in sequence; (1) Three-Part Drill, (2) Teaching a New Concept, (3) Decoding and Learning Centers, (4) Red Words, and (5) Comprehension (Lyon & Liuzzo, 2003). For example, a week of OG instructional sequence would be as follows:

Monday: Three-part drill; new phoneme/rule

Tuesday: Red Words; new concept words; learning centers

Wednesday: Review three-part drill; review red words, learning centers

Thursday: Practice spelling text of phonetic concept and red words; fluency drill; review vocabulary

Friday: Review three-part drill; test of phonetic concepts, red words and vocabulary of the week; comprehension

Three-Part Drill. Each OG lesson begins with a three-part drill and intensive and rapid vowel instruction and review of short vowel sounds, which serve as a review section for all previously taught phonetic concepts. The Three-part drill begins with visual instruction of phonemes that are then reinforced through auditory (i.e., hearing/verbal) and tactile (i.e., touch) methods of instruction, concluding with teacher directed instruction using a flip chart/blending board where students verbally blend consonant and vowels. For example, a three-piece blending board may have the separate consonants and vowel parts "d", "o", "g". First the teacher points to each letter individually, and sounds out each phoneme separately. Then the teacher runs their pointer finger underneath the letters in a fluid motion from left to right while blending the sounds or phonemes together to say the word "dog". Next the students do this process with the teacher. Finally, students will move on to be able to do the process in unison without the teacher model. This drill is rapid, and includes all of the phonetic concepts previously taught (Lyon & Liuzzo, 2003).

Teaching a New Concept. Teaching a new concept incorporates the introduction of a new concept through multi-sensory experiences. Teaching a new phonetic concept (i.e., phonemes (sounds) blended into word or word families such as –ed endings) is a critical aspect of the Orton-Gillingham reading approach because as the National Reading Panel reported, phonics instruction is the bases to the development of successful reading (NRP, 2002; see Bradley & Bryant, 1983; Hohn & Ehri, 1983; Adams, 1990; Yopp, 1995). As stated in the testimony from the U.S. Senate Appropriations Committee NRP chairperson Dr. Donald N. Langenberg, "there was overwhelming evidence that systematic phonics instruction enhances children's success in learning to read and that

such instruction is significantly more effective than instruction that teaches little or no phonics" (NRP, August, 13, 2002). In doing so, new concepts are introduced through multi-sensory instruction of finger tapping new words and pounding of sentences. Students use their non-writing hand to tap out each phoneme or group of phonemes in order to build understanding of the sound and symbol relationship (Lyon & Liuzzo, 2003). For example, when the new word family of –ed has been taught, and is being introduced in the sentence "She moved to a new house", the words "she", "to", "a", "new" and "house" are pounded out, and each phoneme of the new word "moved" will be finger tapped out as "m"-"ov"-"ed". Once the teacher models this process, the whole class will, in unison, pound and finger-tap out and then blend say the whole sentence together, this is known as dictation.

Decoding and Learning Centers. Once the new concepts are presented, students are provided opportunities to practice decoding, vocabulary, fluency, and phonemic awareness through learning centers. Learning centers vary by the concept being taught, and serve as independent learning stations or activities that reinforce the new concept being taught. These can include but are not limited to multi-sensory stations where students use individualized sand or rice boxes to trace out letters or words; leveled readers for students to practice new words or concepts independently; blending board activities with small groups or pairs; and one on one or small group work with the teacher, such as reinforcement of a new concept or of syllable division. For example, syllable division (decoding) builds upon phonetic elements learned with new concepts, and includes vocabulary words from all parts of the lesson, often created from lists generated with new phonetic concepts (e.g., group phonemes "-ll" can create vocabulary

words ending in "-ll", such as "ball", "call", and "fall"). This is a very specific strategy wherein each type of syllable is introduced in sequence depending on where the student is with decoding (Lyon & Liuzzo, 2002). There are seven types of syllables: (1) closed: a single vowel followed, or "closed in" by a consonant to make a short vowel sound, e.g., sun; (2) open: a single vowel which ends with a syllable making a long vowel sound, e.g., veto; (3) magic-e: the five Magic-e vowel patterns are a-e, e-e, i-e, o-e, and u-e, where the Magic-e separated from the previous vowel by a consonant makes it say it's own name, e.g., time; (4) vowel teams: there are six vowel teams: ea, ai, oa, ee, ay, and oe, these two vowels make a long vowel sound or the name of the first vowel in the pair, e.g., beehive; (5) bossy r (or r-controlled): when the r controls the preceding vowel and makes a new sound, e.g., mentor; (6) Dipthong: two vowels together that make a new vowel phoneme (sound) such as ow, ou, au, aw, oi, oy, and oo, e.g., bamboo; and (7) consonant-le: the last syllable which divides the word into two syllables, e.g., candle. These types of syllables are divided into four syllable division patters by vowels (V) and consonants (C): (1) VC/CV; (2) V/CV; (3) VC/V; and (4) V/V.

Red Words. When there are high frequency words that are non-phonetic (i.e., exceptions to the phonetic rule), those are called red (Lyon & Liuzzo, 2003). Red words are reviewed using the "red word" dedicated response cards for sight word unison responding (Lyon & Liuzzo, 2003). For example, often referred to as sight words, words such as *the, I, for, see* and *or* would be taught as red words because they do not follow the rules for sound blending or follow the constraints of what is taught with the conventions of the English language. For example, *see* and *sea*, are taught as red words because they sound the same, but have very different meanings dependent on the spelling.

Comprehension. The final component of the five-part lesson is the comprehension section. The focus of comprehension instruction is for students to incorporate the independently learned language skills to text and real world application. This starts with exposure to readers at the level of each independent student, in doing so the student is moving from their ability to decode a word, or phrase, to then being able to comprehend the meaning of the word in context of the sentence, paragraph, page and overall text. When incorporating additional exposure to other leveled text, this part of the five-part lesson plan guide students from decoding and syllabification of individual letters and sounds to the ultimate goal of independent reading with comprehension. Reciprocal teaching is incorporated into this component through oral reading by having students clarify, summarize, and predict from the text (Lyon & Liuzzo, 2003).

The five-part lesson that comprises Orton-Gillingham Reading Instruction, when implemented early and with fidelity, has shown to improve students reading skills (Lyon & Liuzzo, 2003; Litcher, & Roberge, 1979). This five-part lesson approach was developed by research completed in the 1920's. The early research of the Orton-Gillingham Reading Intervention was originally developed by neurologist Dr. Samuel T. Orton and Anna Gillingham, an educator at the New York Neurological Institute in 1925 (Henry, 1998). Dr. Orton focused on early intervention model of teaching students with reading disabilities the fundamental phonics skills by drill and repetition with visual and written means until students have made the letter-sound association. Through this process and research, Dr. Orton found that with early intervention and the phonics approach to instruction, students may overcome their reading difficulties (Henry, 1998). Since then, the use of multi-sensory phonics instruction for students with reading

difficulties has been researched (e.g., Sadoski et al., 2006: Shaw & Sundberg, 2008). Dr. Orton's early research has been continued by Gillingham and Stillman (1960, 1997), and developed further to expand Orton-Gillingham to a multi-sensory approach to phonics instruction that not only addresses students with dyslexia, but also students with reading difficulties.

Summary and Conclusions

There have been several research studies highlighting the importance of teacher-facilitated engagement for students with challenging behaviors or identified with emotional and behavioral disorders. The literature reviewed regarding OTRs and students with or at risk for identified behavioral challenges shows that frequent opportunities to respond are generally associated with an increase in student active engagement and on-task behavior as well as decreases in disruption. Similarly, the literature reviewed indicates that positive feedback is a beneficial instructional tool. Further, there is evidence supporting a connection between increasing the rate of positive feedback and student engagement. However, the ratio of positive to negative feedback in practice is under-studied, making it difficult to say whether a specific positive to negative feedback ratio is linked to increasing student active engagement.

As discussed, Direct Instruction is characterized by clear presentation of academic content, sequenced components and sub-components of skills, teacher supported instruction, including high rates of opportunities to respond (OTRs), systematic review of content, systematic feedback, initial and ongoing assessment, and student mastery of concepts and skills (Becker & Gersten, 1982; Carnine, Silbert, Kame'enui, & Tarver, 2004). The Orton-Gillingham Reading Instruction includes these essential

features of DI as part of an explicit instruction multisensory phonics-based instructional program for students with reading difficulties.

The literature reviewed provided significant findings to the field of special education, specifically for students with EBD or behavioral difficulties. However, involving students with EBD in general education classrooms has not specifically focused on the degree to which instruction utilizing the essential features of a Direct Instruction reading program might affect active engagement. This study seeks to add to the literature by implementing OG Reading Instruction with first grade students identified with behavioral challenges or EBD in the general education classroom and assessing effects on student active engagement.

The purpose of this research study was to build on and extend prior research on teacher provided OTRs and positive feedback by examining the effects of implementing the IMSE Orton-Gillingham Reading Instruction program on increasing student active engagement for students with or at-risk for EBD in the elementary education general education classroom. The following research questions was addressed:

1. Does the implementation of the IMSE Orton-Gillingham Reading Instruction program increase student engagement for elementary students with challenging behaviors?
2. What is the teacher perception (social validity) of the implementation of the IMSE Orton-Gillingham Reading Instruction program?

CHAPTER III

METHODOLOGY

The literature reviewed in Chapter 2 regarding opportunities to respond (OTRs) and positive feedback for students with or at risk for identified behavioral challenges, showed that frequent use of OTRs and positive feedback are generally associated with an increase in student active engagement and on-task behavior. Additional supporting evidence for a connection between increasing the rate of positive feedback and OTRs and student engagement was reviewed. The literature highlighted the importance of teacher-facilitated engagement for all students, but specifically for students with challenging behaviors and those identified with emotional and behavioral disorders. However, the ratio of positive to negative feedback in practice is under-studied, making it hard to determine whether a specific ratio can be linked to increasing student engagement. As illustrated by reviewed literature, OTRs and positive feedback are incorporated into the Direct Instruction model, and the Orton-Gillingham Reading Instruction approach includes the essential characteristics of DI as a part of the explicit instruction multisensory phonics-based program for students with reading difficulties.

As students with challenging behaviors are increasingly educated in the general education classroom, examination of the degree to which instruction utilizing the essential features of Direct Instruction through an explicit instruction-reading program might affect students' engagement is an area that is under-studied. This dissertation research study sought to add to this area of literature by implementing Orton-Gillingham Reading Instruction with 1st grade students identified with behavioral challenges in the

general education classroom and assessing the effects on target student active engagement. The following research questions were addressed:

1. Does the implementation of the IMSE Orton-Gillingham Reading Instruction program increase student engagement for elementary students with challenging behaviors?

2. What is the teacher perception (social validity) of the implementation of the IMSE Orton-Gillingham Reading Instruction program?

Setting and Participants

Setting. This study was conducted across three 1st grade general education elementary classrooms in a rural public elementary school (grades prek-5) in the southeastern United States. The school enrollment was approximately 650 students, with 15% involved in special education services. The teacher provided instruction in the front of the classroom, with students at their individual desks. The intervention was conducted as part of whole group instructional setting with breakout groups based on the intervention procedure.

Teachers. Three volunteering teachers were solicited based on the selection criteria that they: (a) provide daily direct instruction in the area of phonics or reading (b) have at least one student identified with challenging behaviors, and (c) are interested and trained in implementing Orton-Gillingham Reading Instruction. All three teachers identified themselves as females, hold K – 5 elementary general education certification, and are currently teaching first grade. Teacher 1 is 32 years old, has ten years of teaching experience and her masters' degree. Teacher 2 is 32 years old, has six years of teaching

experience and is currently working on her masters' degree. Teacher 3 is 25 years old, has three years of experience and her masters' degree. See Table 4 for demographics.

Students. Participating students have been previously identified as having challenging behaviors by teacher recommendation. Once identified through teacher selection, students were observed and their active engagement data was collected to determine which of the teacher nominated students had the least percentage of active engagement as compared to their classmates. There was not a specific percentage of active engagement required in order to be identified as a participant, as all of the classes had relatively stable rates of active engagement across students. The selected students were those who had the lowest percentage of active engagement compared to the class average during per selection observation: class 1 active engagement averaged 23.3%, student 1 averaged 16.6%; class 2 active engagement averaged 23.6%, student 2 averaged 8.8%; and class 3 active engagement averaged 24.3%, student 3 averaged 0.9%. These students were identified as the three target students included in the study. After receiving IRB approval, permission from their parent/guardian was obtained prior to the study and the student was assented for participation. Table 4 provides the teacher and student demographics by classroom pair. The students participating were identified using a multi-digit code to protect privacy. Everything pertaining to the study was stored in locked cabinets and transmitted over secured servers.

Table 4.

Participants demographic information by Teacher-Student dyad.

Teacher 1	**Student 1**
10 years experience	Male

K-5 Elementary Education Certification Masters Degree First Grade Caucasian Female	Caucasian 7 years old First Grade Student Identified with challenging behaviors
Teacher 2 6 years experience K-5 Elementary Education Certification Bachelors Degree First Grade Caucasian Female	**Student 2** Male Caucasian 7 years old First Grade Student Identified with challenging behaviors
Teacher 3 3 years experience K-5 Elementary Education Certification Masters Degree First Grade Caucasian Female	**Student 3** Male Latino 7 years old First Grade Student Identified with challenging behaviors and English Language Learner

Procedures

Measures and Data Collection

An alternating treatment design (Gast, 2010) was used to compare the two reading intervention conditions. The effect of these interventions on student and teacher behavior

in early elementary school settings was measured through direct observation. This design allows for comparison of the two types of reading intervention conditions in terms of effect on student active engagement and disruption. Data was collected by trained coders using hand-held computer technology. The materials, training, reliability, and validity of this direct observation procedure are described below.

Materials. Data was collected through direct observations of teacher and student interactions using a software program designed for collection of information through direct classroom observation. The Multiple Option Observation System for Experimental Studies Version 3 (MOOSES^{TM}) (Tapp & Wehby, 1995) is a software program that allows for creation of unique codes to be determined by the collector and provides data analysis capabilities including computation of interobserver reliability and conditional probability. An element of the MOOSES program is "Minimoose^{TM}", a software component that can be uploaded to handheld devices. For this study a handheld device, the HPiPAQ 111 Classic Handheld, was used by trained observers in the classroom to code specified teacher and student behaviors. Frequency and duration information codes are operationally defined for collection of teacher and student behaviors during classroom instructional time.

Training. Data was collected by trained coders. These individuals received training on the operational definitions and use of the handheld device, and demonstrated reliable performance with the procedures for data collection prior to collecting in the classroom. These three training steps are described separately below.

Step 1 **-** A list of codes and definitions was provided to each coder and the definitions explained for clarification. A handheld device was given to each coder for

practice with videos of teachers teaching in classrooms. Coders demonstrated use of the handheld and accuracy with codes through interobserver reliability sessions with the trainer. The trainer (lead coder) worked directly with the primary researcher to ensure accurate implementation of data collection procedures. Coders must have reached at least 80% reliability with the trainer using the video sessions to move to the next step.

Step 2 - The lead coder and trainee then move to the classroom environment and coded sample observations for further training and continued calculation of interobserver reliability. Each trainee must have reached at least 80% accuracy in the classroom environment before coding live observations.

Step 3 - Each coder will received a schedule with student information and a checklist for coding direct observations. Daily, coders arrived and check-in at the school, located the classroom, and collected the observation data for the target student. The completed observation file was then forwarded to the primary investigator through secure email for storage and analysis.

Reliability and validity. Direct observation techniques were used to collect information in real time in the natural classroom environment. Direct observation systems were described by Rosenshine (1970) with four primary assessment or descriptive uses (1) variability within or between classroom behaviors (2) agreement within or between classroom behaviors (3) occurrences of behaviors and (4) relationships between behaviors. Since the early 1970's researchers continue to use a variety of direct observation techniques for similar and expanded purposes. To increase the likelihood that coders recorded direct observations accurately and with agreement, the interobserver reliability between coders was collected between the lead coder and each individual coder

during at least 30% of all observations. The MOOSES™ program was used to calculate the agreement of frequency and duration recording between coders within a 5-second window. Two files were entered into the program resulting in a comparison of frequency agreements and disagreements as well as a duration comparison to the second of agreements and disagreements. This information was used to calculate a percentage agreement by code. The point-by-point method of agreement was used to assess this interobserver reliability by dividing the agreements by the agreements plus disagreements, multiplied by 100 (Gast, 2010). This was calculated for frequency and duration codes. The percent of agreement was identified for each coded teacher and student behavior using the MOOSES™ software and additional spreadsheet formula analysis (Tapp & Wehby, 1995).

Data collection procedure. Data was collected using a procedure specifying the process for entering schools and locating classrooms, identifying students, and steps for entering data into the handheld devices. Teacher and student information was collected through file name designation as well as code frequency (See Appendix A, Data Collector Coding Manual). Upon entering a classroom, coders were seated in the back of the room, with clear vision of the target student, but not intrusive to instruction. Coders entered a 20-digit code into the handheld, each digit designated the site, school, student number, observation number, coder identification number, date, and student disability category. During reliability sessions the coder marked "REL" in the date stamp for use in identification. The primary coder in the reliability dyad marked "PRI" in the date stamp.

Independent Variable. The independent variable in this study was the implementation of Orton-Gillingham Reading Instruction. In order to examine the

differences between teachers' general reading instruction and the implementation of Orton-Gillingham on the dependent variable of student engagement, the rate of teachers' providing positive feedback and OTRs was also collected. For the purpose of this study, an instance of positive feedback was recorded when it was directed to the target student or when directed to the group including the target student. An example of positive feedback to the student individually is, "Yes, Max, the capital of Connecticut is Hartford", and an example of positive feedback to the group that included the target student is, "Thank you, everyone, for having your books open to page 28." An instance of an OTR was defined as the teacher providing the class an opportunity to respond to an academic question or request. This includes any instance where the teachers asks an academic question (e.g., "What word is this?") or makes an academic request (e.g., "Point to the next word in the sentence."). The response from the student may be verbal, gestural, or an action (Scott, Alter, & Hirn, 2011). Opportunities to respond are recorded as a group OTR (directed to the entire group including the target student) or as an individual OTR (directed solely to the target student). The metric associated with an instance of a positive feedback and/or an OTR is "rate of occurrence per minute."

Data collection and intervention implementation occurred during a daily school-wide 30-minute reading intervention period. During baseline observation and data collection occurred for the first 15 minutes of the intervention period. Once intervention phase began, the 30-minute reading period was divide into two 15-minute intervention conditions: 15-minutes for the general reading instruction condition, and 15-minutes for Orton-Gillingham Reading instruction condition. Conditions switched by the prompting of an alarm that each teacher set once they began the first condition before moving to the

alternate, and according to the alternating treatments design, conditions switched in a counterbalanced manner.

Baseline/General Reading Instruction. During baseline data collection, teachers and students were observed for 15 minutes during a consistent daily time (predetermined reading intervention period). Data collectors recorded the frequency of positive feedback, OTRs, student active engagement and disruption. The general reading instruction condition consisted of the teachers implementing the states common core standards for reading in a self-created lesson format incorporating some sort of phonics instruction as well as student reading comprehension development, referred to as the workshop model of reading instruction. The typical self-created lesson format of the workshop condition of reading instruction included the following activities:

- Review of classroom expectations with a preselected student leader
- Review broad idea of the lesson of the day
- Prepare for book reading using the following:
    - Identify picture clues of the cover
    - Review learning target
    - Remind what that looks like with precorrection
    - Make Predictions
- Read selected book
- Identify/Review pieces of the lesson
- Related activity
    - Turn and talk to a partner
    - Review/connect to the story

- Individual connection/story related activity

Across the three individual teachers' reading instruction during baseline, the researcher observed the implementation of the lesson activities as described above to create a fidelity of implementation checklist for the workshop condition. The checklist was created based on the lesson aspects of the outline, and altered from the lesson format depending on how the individual teachers implemented the pieces of the lesson in practice. For instance, the addition of examples of what teacher questioning could look like during implementation was included in the checklist as each teacher implemented slightly differently. For example, the "Identify/Review pieces of the lesson" included the following range of examples:

- "Who is our main character? Who is granny? What's her role?"
- Middle of the book, student check in with a "give me a thumbs up if you have thought about being all grown up" & "What is she doing here?"
- Interact with the story – "what do she need to do first?"

The checklist was then used during implementation conditions, see Appendix C for the fidelity of implementation checklist. The fidelity instrument created during baseline observations of each teacher reflected the components of the self-created reading lessons which aligned to the reading standards as well as the teachers rates of OTRs, positive feedback, and student active engagement and disruption. See Appendix B for the common core state standards for first grade reading used during the study.

In accordance to the Alternating Treatments research design, all teachers baseline was collected for a minimum of three observations and then continuously observed as the workshop condition of intervention serving as the baseline condition.

Intervention/Orton-Gillingham. During the intervention implementation conditions, as previously described the 30-minute reading intervention period was broken into two 15-minute condition phases. The two reading instruction programs were alternated daily in a counterbalanced order (Barlow & Hayes, 1979) and data collectors recorded positive feedback, OTRs and student active engagement separately for each condition, daily. The intervention phase ran for at least 5 days, providing a minimum of 5 data points for each of the reading intervention conditions, or a minimum total of 10 observation comparison points.

Each teacher has already completed the IMSE Orton-Gillingham implementation training course and was provided with the necessary materials for each lesson and student. The teaching sequence and lesson plans were provided from the training program. An example of the Orton-Gillingham lesson sequence is provided below.

Step 1. Example Three-Part Drill Lesson and Materials. There are three components to this step: visual, auditory/kinesthetic, and blending. The following example is of the first component the visual drill (IMSE Teacher Manual, 2014). Teachers will gather the previously provided teacher card pack of letter cards. The teacher will include only the concepts previously taught in the card pack. Teacher will:

- Present the selected cards, one at a time, in random order.
- Since the concepts are previously taught, when the card is presented visually, the class responds by pronouncing the phoneme (sound) to the grapheme (letter) shown.
- Teacher may prompt with "What sound?"

- If students struggle or pronounce incorrectly, teacher re-inserts the letter card into the pack to re-try.
- If the letter represents more than one sound, instruct students to say both sounds, one after the other by prompting. For example the letters *th*, teacher prompts by saying: "*TH* says ____ and ____". Students respond with hard and soft sounds, such as *th* as in *that* is a hard sound, and *th* as in *thumb* is a soft sound.
- This process is repeated rapidly for the entire deck of previously taught cards until students have produced all of the learned sounds.

Step 2. Example New Phonetic Concept Lesson and Materials. There are two components to this step: multi-sensory experience, and application/dictation of the new concept. The following example is part of the first component the multi-sensory experience of letter formation (IMSE Teacher Manual, 2014). Teachers will gather the previously provided materials: House Paper (see appendix for example) on transparency, house paper for each student, green crayon and screen for every student. For the example of the letter S, teacher will:

- Model "how to" form a capital letter S on the outside space of the house paper on the transparency using a green crayon to make a solid S for the class to see.
- Students then create their own S like the teacher modeled on their paper with their green crayon.
- Teacher and students will then place the screen under the paper and trace the solid example S with the crayon 5 times to create bumps while tracing.
- While tracing teacher and students verbalize, "S says sssss" each time they trace.

- Teachers and students then remove the screen and trace the bumps three times with their writing-hand pointer finger, verbalizing as they trace.
- Students then trace the dotted letter S with the crayon one more time, verbalizing as they trace.
- Students independently create the capitol letter S one more time on their paper.
- Have students circle their best capitol S.
- When ready, students move onto the smaller house on the paper to create the same process as above, with a lower case s.

Step 3. Example Decoding Lesson and Materials. The following example is a multi-sensory experience of the first of the seven syllable types, closed and open and first two patterns, VC/CV and V/CV (IMSE Teacher Manual, 2014). In this step, teachers will gather the following previously provided materials: strips of paper one for each student, and post-it notes for the example. Teacher will:

- Model how to make the door by taking a strip of paper, and fold the last 1/3 over to create a flap or "door".
- Have students create their own door with a strip of paper the same way.
- For the example, write the letters "g – o" on a post-it note and place it on the 2/3 of paper strip before the door.
- On another post-it note, write the letter "t" and place it on the 1/3 piece of folded over paper, or the door.
- Explain and show when the door is closed, showing the letters "g-o-t" it represents a closed syllable and a short vowel sound.
- Have students say the short vowel sound as in "got".

- Open the door showing the letters “g-o”. Explain this represents an open syllable and a long vowel sound.
- Have students say the long vowel sound or shouting out the vowels name (“O), as in “go”.
- When example is completed, have students use their strips of paper to create doors (such as the example: go/t) for the chosen words of the day.

Step 4. Example Red Word Lesson and Materials. In this step, teachers will gather the following previously provided materials: a classroom set of the selected high-frequency Red words written in red on a white sheet of paper or flash card, a classroom set of red crayons and white sheets of paper or flash cards for each student. Teachers will select the Red word(s) for the lesson and follow the introduction and guided practice lesson as follows (IMSE Teacher Manual, 2014). Teachers will:

- Hold the word in their non-writing hand.
- Slide the pointer finger of their writing hand under the word while reading it – repeated 3 times.
- Take their same finger and trace the letters while spelling the word, then slide their finger under the word while you reading it again – repeated 3 times with students in unison response.
- Extend their non-writing arm out in front while holding the card in their hand.
- Place their writing hand on their arm and slide it from shoulder to wrist while reading the word – repeated 3 times with students in unison response while modeling on their arm.

- Spell the word, tapping once for each letter down their arm. Then read the word again while sliding their hand from shoulder to wrist – repeated 3 times with students in unison response
- Give each student a white piece of paper or flash card and a red crayon. Instruct them to write the word, saying the letters aloud as they write, and underline the word as they read it – repeated on both sides of the small blank piece of paper.
- Collect all of the supplies and have the student read the word – repeated for each word taught during the lesson

Step 5. Example Comprehension Lesson and Materials. This lesson section can be done as whole class instruction or as an independent activity for students. This example will be for comprehension through whole group instruction of the new concept letter C. In this step, teachers will gather the following previously provided materials: Eric Carle's book "The Very Hungry Caterpillar", or alternative text that matches the new concept taught that week, and a paper easel or dry erase board that the class can see. Teacher will:

- Introduce the book "The Very Hungry Caterpillar" by Eric Carle.
- Prior to reading the book, using the paper easel, teacher asks and records what the students predict the story will be about.
- Once they have predicted what the story may be about, using pictures or prior knowledge, read the first page.
- After the first page is read, on a fresh sheet of paper, teacher asks students to generate questions based on what they know so far, and record the questions.

- Repeat this step every page or so, depending on the level of text and students abilities.
- Once the story is read, teacher will ask "Are there any parts that are confusing or unclear about the story?" If so, teacher and students will work together to clarify the reading and analyze to find meaning and understanding of the story.
- Revisit the student created questions, and use the story to answer the questions as part of clarifying for understanding.
- Revisit the student created predictions and compare if they are accurate to what the story said. Discuss what happened and what did not.
- Using a new piece of paper, work together as a class to create a one to two sentence summary of "The Very Hungry Caterpillar".

Teachers were taught each of the lesson sequences and provided with the necessary materials during the 45-hour IMSE Orton-Gillingham Instructors Course completed prior to the study starting as part of the school's reading initiative.

Fidelity. Teacher behaviors were measured to assess fidelity as the impact of the implementation of the Orton-Gillingham reading intervention. Direct observation was used as the primary instrument of measurement as is standard for single subject research (Kazdin, 2011). Data collectors observed teachers using Multiple Option Observation System for Experimental Studies (MOOSES^{TM}, Tapp, Wehby, & Ellis, 1992), which measured the frequency of positive feedback and OTR presented across each observation. This data was calculated as rate per minute for each and the results were uploaded to a main database and converted to line graphs.

The fidelity checklist created during baseline of each of the teachers' general reading instruction was used during the alternating conditions to assess fidelity. Equally, a fidelity checklist for the intervention of Orton-Gillingham was used during the intervention condition that follows each piece of the lesson plan previously detailed (see Appendix C for both fidelity checklists).

Dependent Variables. Student active engagement was observed and recorded as the dependent variable. Overall student engagement involves active engagement, passive engagement, and off task, each of which was coded using a duration recording procedure and reported as a percent of observed time. These are mutually exclusive variables so that one of the three must be coded as occurring at all times and no two may be occurring at the same time, therefore allowing the isolation of active engagement as the dependent variable. Observers used a five second rule for toggling between duration codes so that a student must engage in a behavior (active engagement, passive engagement, or off task) for at least five uninterrupted seconds in order for the observer to change the code.

Active engagement was defined as the target student actively engaging with instructional content via responding chorally, raising hand, responding to teacher instruction, writing, reading, or otherwise completing assigned tasks.

Examples:

- Target student is writing on an assigned worksheet page.
- Target student is reading out loud with the class when directed to do so, following along with finger or eyes in text.
- Target student is working in assigned group helping to complete a task.

Non-examples:

- Student is watching or listening
- Target student is oriented towards the teacher or speaker and appears to be following instruction or course of events.
- Student is sleeping

Passive engagement will be is defined as the target student passively attending to instruction through physical or visual orientation to teacher or peer if appropriate.

Examples:

- Student is listening to lecture or watching presentation including PowerPoint or video.
- Student looks and listens to another student called on.
- Head down on desk yet eyes oriented to teacher.
- Target student is oriented towards the teacher or speaker and appears to be following instruction or course of events.

Non-examples:

- Student has head down yet not looking at teacher.
- Student looks and listens to a student talking about an off-task topic.

Off-task is defined as the target student being neither actively nor passively engaged. The key to defining off task is the student's lack of any engagement or attention to teacher directions. However, the student who is off task may or may not be disrupting the class.

Examples:

- Target student is out of seat without permission (regardless of whether bothering others).

- Target student looking away from the teacher or instructional materials.
- Target student not complying with a request (e.g., to open books, to look at board, to write an answer and does not appear to be thinking about the answer to write).
- Target student has head down on desk with eyes closed.

Non-examples:

- Student looks away and talks to peer for less than 5 seconds.
- Student silently watches teacher.

Disruption is a frequency variable that was tallied with each individual occurrence. It is defined as the target student engaging in a behavior that does or potentially could disrupt the lesson by distracting teacher or peer attention away from the instruction (e.g., out of seat; noises, talking to peer, making comments). Note that although disruption denotes off task behavior, if the disruption occurs for less than 5 seconds the student's engagement code may not change. Disruptive behaviors can range from low intensity (e.g., out of seat to sharpen pencil) to high intensity (e.g., making derogatory statements or destroying property).

Examples:

- Target student is out of seat without permission and taking to peer.
- Negative talk.
- Argumentative or noncompliant talk.
- Target student is ripping or crumbling paper in loud way drawing attention from teacher and/or peers.
- Target student is making noise - drawing attention from teacher and/or peers.

- Target student curses at teacher or peers.
- Target student makes threatening comments to teacher or peers.
- Target student verbally refuses to complete assignment or comply with directions.
- Loudly tapping pen or rocking in chair to extent it is drawing attention or has potential to draw attention and disrupt instruction

Non-examples

- Sleeping.
- Laying head down.
- Not answering when called on.
- Quietly tapping pen or rocking in chair if not distracting or drawing attention.

Student behaviors were assessed using direct observation. Data collectors observed students using Multiple Option Observation System for Experimental Studies (MOOSES^{TM}, Tapp, Wehby, & Ellis, 1992), which measured the frequency of student active engagement presented across each of the 15-minute observations. This data was calculated as rate per minute and the results were uploaded to a main database and converted to line graphs.

Reliability and interobserver agreement. Lead data collectors coded concurrently during at least 20% of observations as an index of interobserver reliability. Reliability measure data was coded separately and compared by MOOSES software to produce reliability calculations using a 5-second window for agreement by code. The reliability coefficients for positive feedback, OTR, and active engagement were reported.

Social Validity. The Intervention Rating Profile-15 (IRP-15; Martens, Witt, Elliott, & Darveaux, 1985) was used to collect descriptive data on the social validity from the teachers' perspective of the intervention pre and post implementation.

Experimental Design

Alternating Treatments

Alternating treatments design (ATD) was selected for this study because it can be used to compare the effect of two distinctive treatments (Barlow & Hayes, 1979). An advantage of ATD is that the comparison can be made more quickly than with other designs. An alternating treatments design was used to evaluate the effectiveness of the general education reading workshop instruction and Orton-Gillingham Reading Instruction in terms of student active engagement. In addition, conditions were compared to a baseline condition of workshop instruction, which served as a control. Both conditions were implemented in a counter-balanced sequential manner in the general education classroom, in 15 minute segments. Data was collected across all phases on the teacher's rate of positive feedback and OTRs as well as on student active engagement.

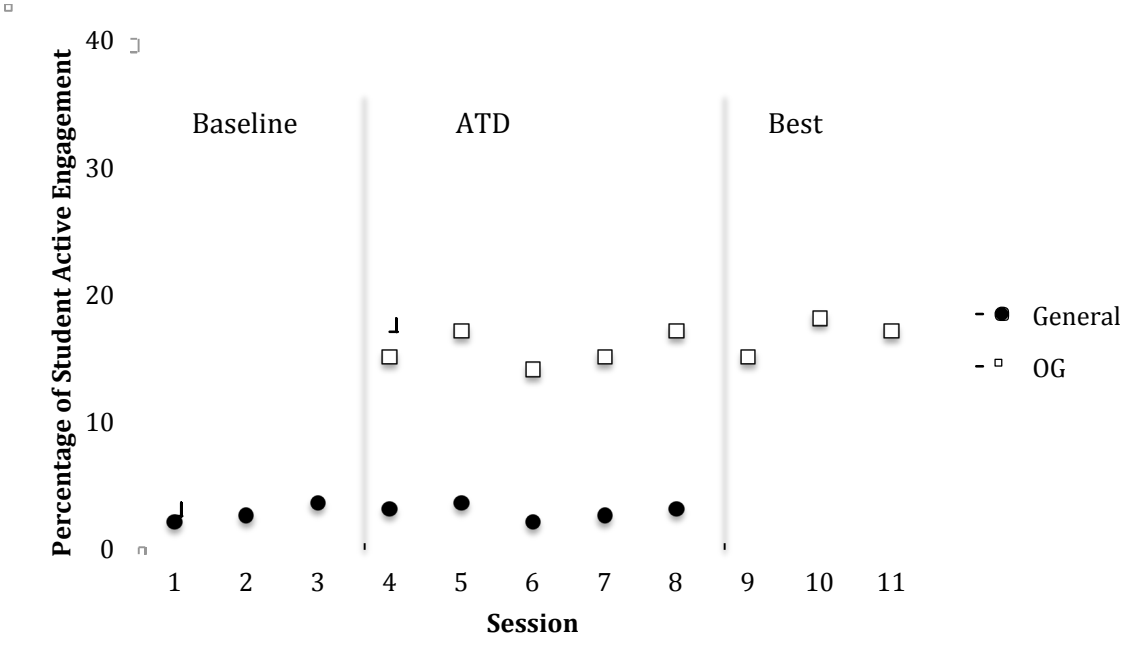
While this is not as rigorous as a group design, it is standard in the field of special education and is good for identifying variables in need of more rigorous research examination. Analysis was done via single subject protocol – visual analysis of differences for individual cases. The components of visual analysis relevant to this study were trend, variability and maintenance of the data. The visual analysis showed the separation between the variables, which I hypothesized to have a sizeable separation between the conditions of general reading workshop instruction and Orton-Gillingham instruction, as well as observed a higher trend of student engagement during OG

condition than in workshop. Visual analysis of maintenance shows the effects of the best condition, which I am hypothesizing to be OG. By observing a higher level of student active engagement, a distinct separation of variables between the two reading conditions, and a stable or increase during maintenance shows that the intervention of OG reading instruction had greater effectiveness on student active engagement than general reading workshop instruction.

Figure 1 has a graph of what my hypothesis may look like. My hypothesis was that students on OG would have higher rates of student active engagement than in the general reading workshop instruction condition.

Figure 1.

Hypothesis of Percentage of Student Active Engagement



CHAPTER IV

RESULTS

Chapter IV presents the results in terms of student outcomes, teacher behavior, interobserver agreement (reliability) and social validity. Across results, the prescribed research questions are specifically addressed:

1. Does the implementation of the IMSE Orton-Gillingham Reading Instruction program increase student engagement for elementary students with challenging behaviors?

2. What is the teacher perception (social validity) of the implementation of the IMSE Orton-Gillingham Reading Instruction program?

Student Outcomes

The key dependent variable for this study was Active Engagement, which was defined as the target student actively engaging with instructional content by responding chorally, raising hand, responding to teacher instruction, writing, reading, or otherwise completing assigned tasks. The percent of time the student was actively engaged with instruction was recorded using direct observation and the results by student are reported below.

Student 1

During baseline the level of active engagement during workshop reading instruction ranged from 4.6% to 34.4% with a mean of 16.6% active engagement and a slight downward trend.

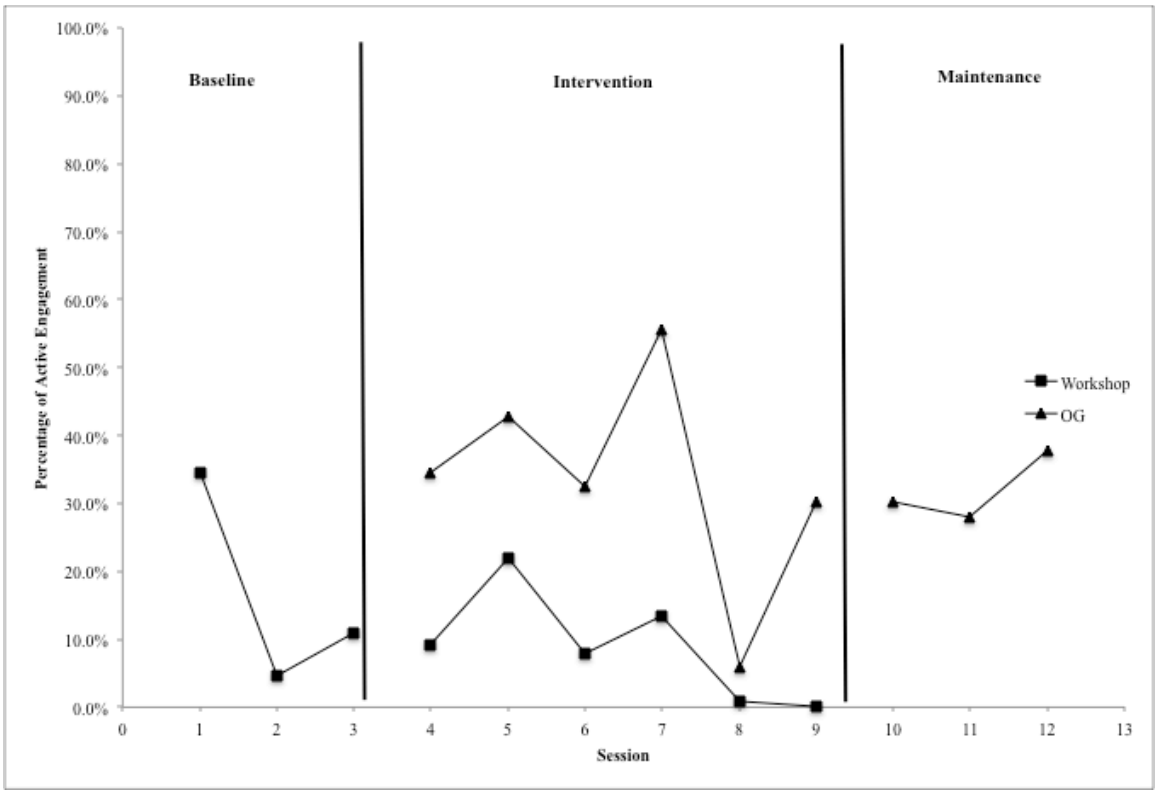
Intervention involved two conditions (workshop reading instruction and Orton-Gillingham reading instruction) that were alternated for comparison. Active engagement

levels in the workshop reading instruction condition for student 1 ranged from 0.0% to 21.9% with a mean of 16.6% and a continued downward trend. In comparison, active engagement levels in the Orton-Gillingham (OG) reading instruction condition for student 1 ranged from 6% to 55.6% with a mean of 33.6% and a slight downward trend. There was one overlapping data point (session 8) where there was a day of low interobserver agreement or reliability (IOA). Data collectors were retrained, and an additional day of intervention IOA was collected. Excluding this one outlier point, the level of active engagement during OG reading intervention ranged from 32.4% to 55.6% with a mean of 39.1% and a fairly flat trend.

The Orton Gillingham reading intervention was continued during maintenance. The level of active engagement during maintenance ranged from 28.0% to 37.8% with a mean of 32.0% and a slight upward trend. Data for Student 1 are summarized in Figure 2.

Figure 2.

Student 1 Percent of Active Engagement



Student 2

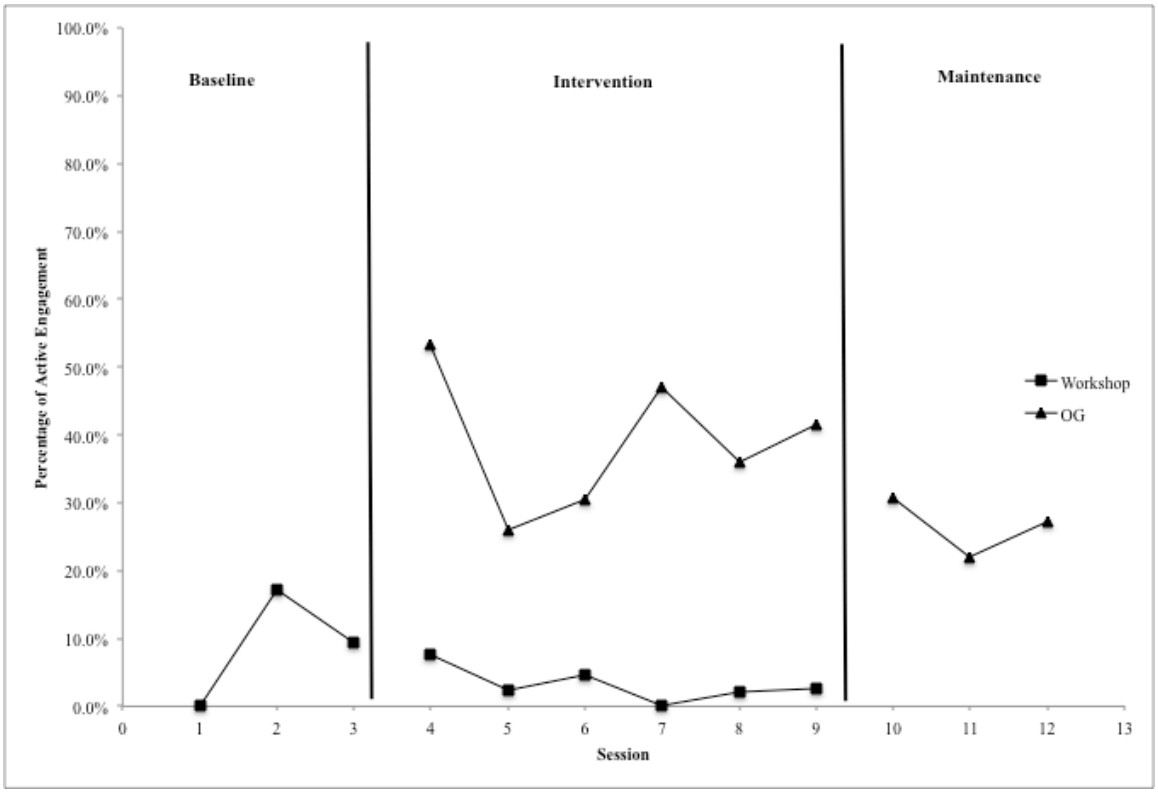
During baseline the level of active engagement during workshop reading instruction ranged from 0.0% to 17.3% with a mean of 9.0% active engagement and a slight downward trend.

Intervention involved two conditions (workshop reading instruction and Orton-Gillingham reading instruction) that were alternated for comparison. Active engagement levels in the workshop reading instruction condition for student 2 ranged from 0.0% to 7.6% with a mean of 3.2% and a continued downward trend. In comparison, active engagement levels in the Orton-Gillingham (OG) reading instruction condition for student 2 ranged from 26.0% to 53.4% with a mean of 39.1% and a slight downward trend.

The Orton Gillingham reading intervention was continued during maintenance. The level of active engagement during maintenance ranged from 22.0% to 30.7% with a mean of 26.6% and a slight upward trend. Data for Student 2 are summarized in Figure 3.

Figure 3.

Student 2 Percent of Active Engagement



Student 3

During baseline the level of active engagement during workshop reading instruction ranged from 0.0% to 2.7% with a mean of 0.9% active engagement and a flat trend.

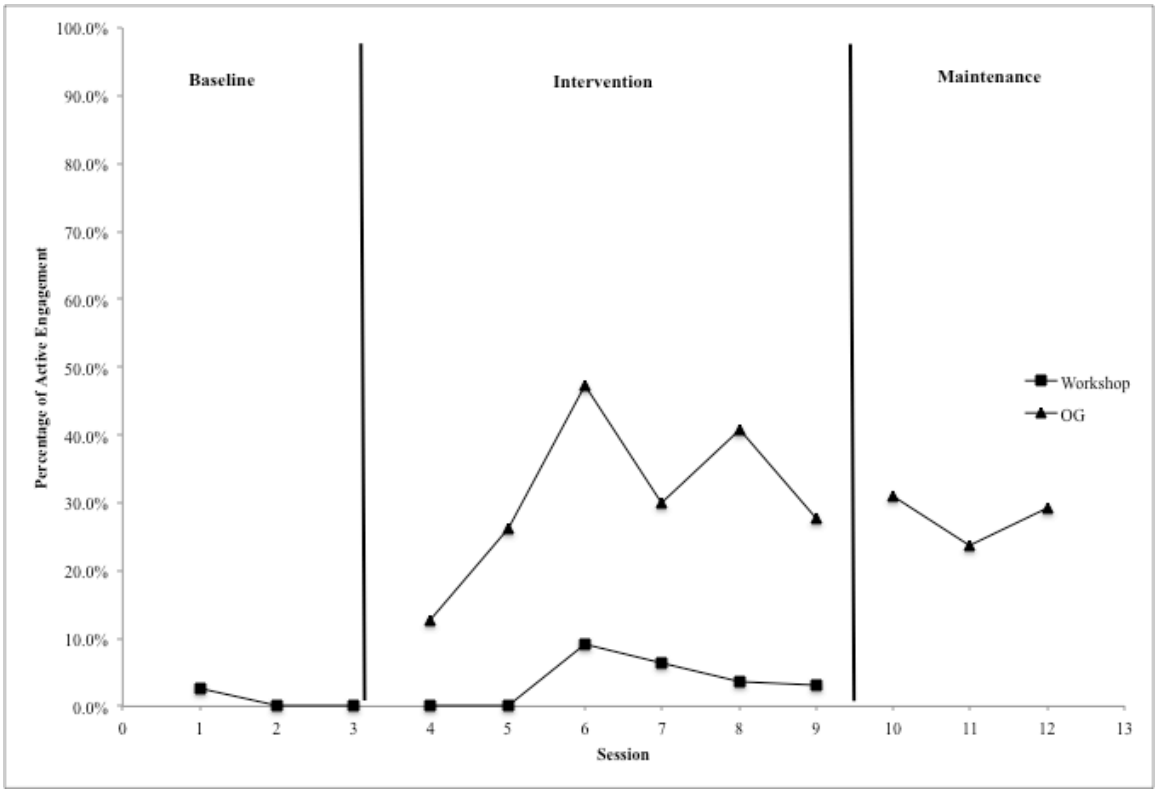
Intervention involved two conditions (workshop reading instruction and Orton-Gillingham reading instruction) that were alternated for comparison. Active engagement

levels in the workshop reading instruction condition for student 3 ranged from 0.0% to 9.1% with a mean of 3.7% and a continued downward flat trend. In comparison, active engagement levels in the Orton-Gillingham (OG) reading instruction condition for student 3 ranged from 12.7% to 47.2% with a mean of 30.8% and an upward trend.

The Orton Gillingham reading intervention was continued during maintenance. The level of active engagement during maintenance ranged from 23.7% to 31.0% with a mean of 28.0% and a slight upward trend. Data for Student 3 are summarized in Figure 4.

Figure 4.

Student 3 Percent of Active Engagement



Across all students the average percent of active engagement during baseline was 8.8%. During intervention the mean of the workshop condition was 7.0% while the mean

of the OG condition was 31.6%. Thus the difference in students' active engagement between the workshop condition and the OG condition averaged 24.6%.

Teacher Variables

To demonstrate, as hypothesized, that the rates of OTR and positive feedback were higher during the OG condition than workshop condition, teacher variables were collected and are reported next.

Opportunities to Respond

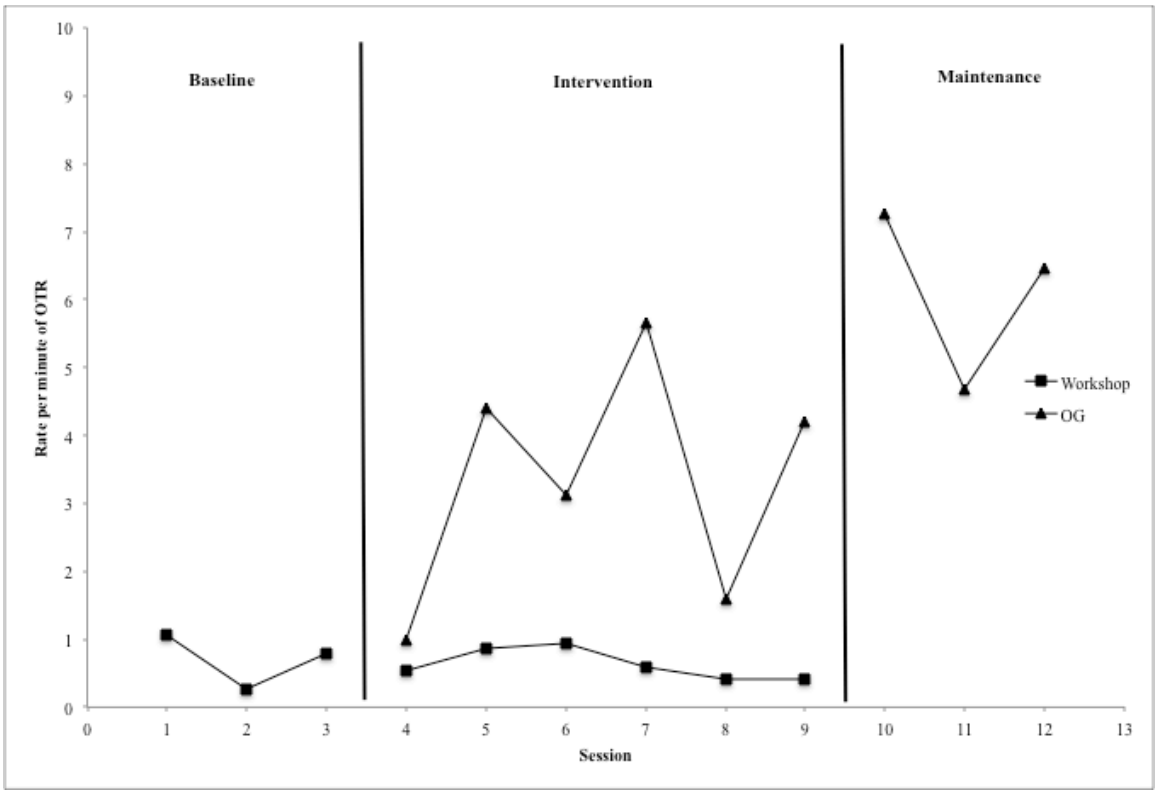
Teacher 1. During baseline the rate per minute of OTRs provided by teacher 1 ranged from 0.27 to 1.07 with a mean of 0.70 and a slight downward trend.

During intervention, the level of OTR for Teacher 1 in the workshop reading instruction condition ranged from a rate per minute of 0.40 to 0.93 with a mean of 0.62 and a flat trend. In comparison, during the Orton-Gillingham (OG) reading instruction condition levels of OTR ranged from 1.00 to 5.67 with a mean of 3.33 and a fairly flat but variable trend. Again, There was one overlapping data point (session 8) where there was a day of low interobserver agreement or reliability (IOA). Data collectors were retrained, and an additional day of intervention IOA was collected. Excluding this one outlier point, the mean level of OTR during OG was 3.68 with an increasing trend.

OG reading intervention was continued during maintenance. The level of OTR during maintenance ranged from 4.67 to 7.27 with a mean of 6.13 and an upward trend. Data for OTR with Teacher 1 are summarized in Figure 5.

Figure 5.

Teacher 1 Number of OTRs.



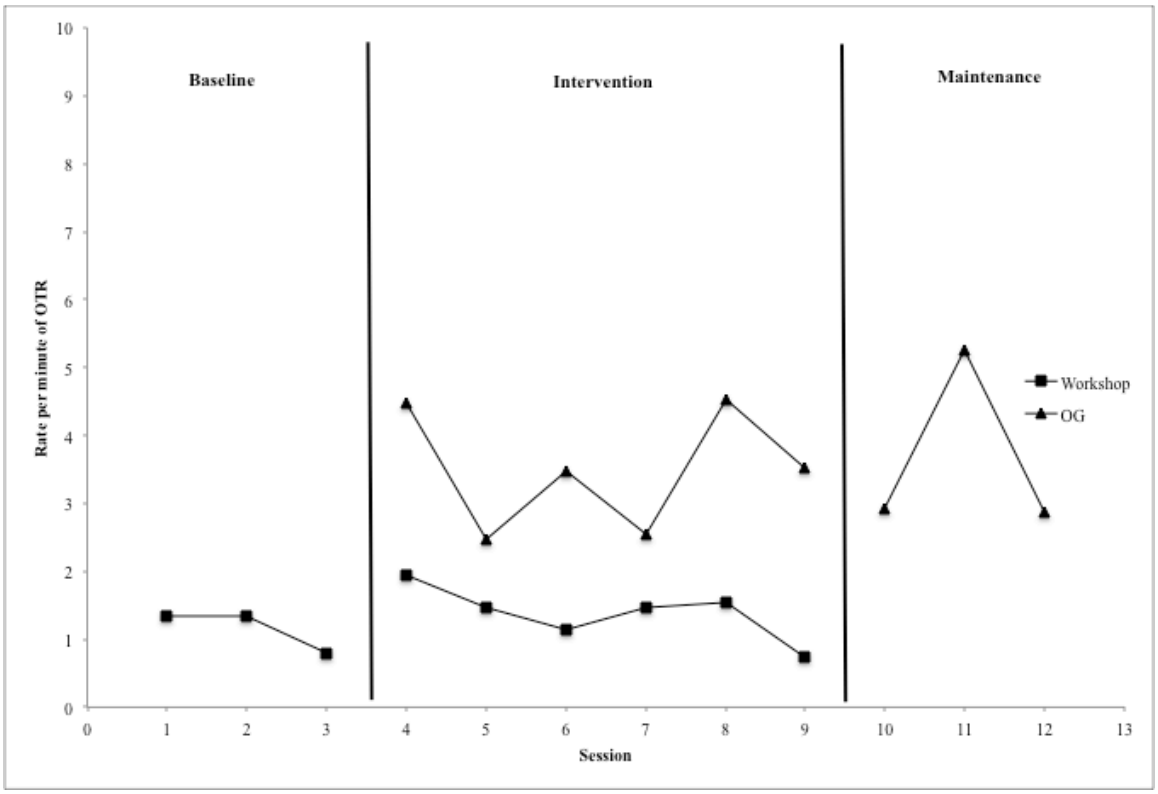
Teacher 2. During baseline the rate per minute of OTRs provided by teacher 2 ranged from 0.80 to 1.33 with a mean of 1.15 and a slight downward trend.

During intervention, the level of OTR for Teacher 2 in the workshop reading instruction condition ranged from a rate per minute of 0.73 to 1.93 with a mean of 1.37 and a downward trend. In comparison, during the Orton-Gillingham (OG) reading instruction condition levels of OTR ranged from 2.47 to 4.53 with a mean of 3.50 and a slight upward trend.

OG reading intervention was continued during maintenance. The level of OTR during maintenance ranged from 2.87 to 5.27 with a mean of 3.55 and a flat trend with high variability. Data for OTR with Teacher 2 are summarized in Figure 6.

Figure 6.

Teacher 2 Number of OTRs.



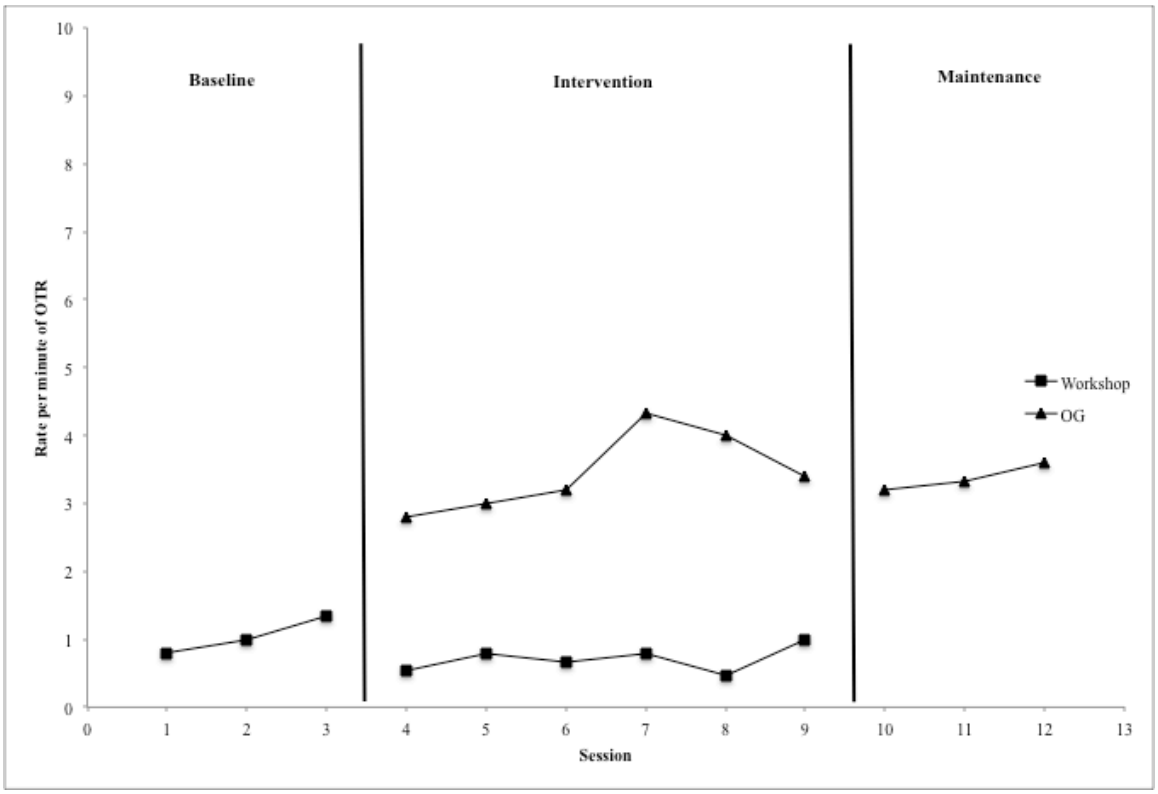
Teacher 3. During baseline the rate per minute of OTRs provided by teacher 3 ranged from 0.80 to 1.33 with a mean of 1.04 and a slight upward trend.

During intervention, the level of OTR for Teacher 3 in the workshop reading instruction condition ranged from a rate per minute of 0.47 to 1.00 with a mean of 0.71 and a stable flat trend. In comparison, during the Orton-Gillingham (OG) reading instruction condition levels of OTR ranged from 2.80 to 4.33 with a mean of 3.45 and a slight upward trend.

OG reading intervention was continued during maintenance. The level of OTR during maintenance ranged from 3.2 to 3.6 with a mean of 3.37 and a slight upward trend. Data for OTR with Teacher 3 are summarized in Figure 7.

Figure 7.

Teacher 3 Number of OTRs.



Across all teachers the average rate per minute of OTRs during baseline was 0.96. During intervention the mean of the workshop condition was 0.90 while the mean of the OG condition was 3.43. Thus the difference in teachers' OTRs between the workshop condition and the OG condition averaged 2.53 per minute.

Positive Feedback

Teacher 1. During baseline the level of positive feedback statements provided by teacher 1 ranged from 0.0 to 0.13 with a mean rate per minute of 0.07 positive feedback statements during baseline with a flat trend.

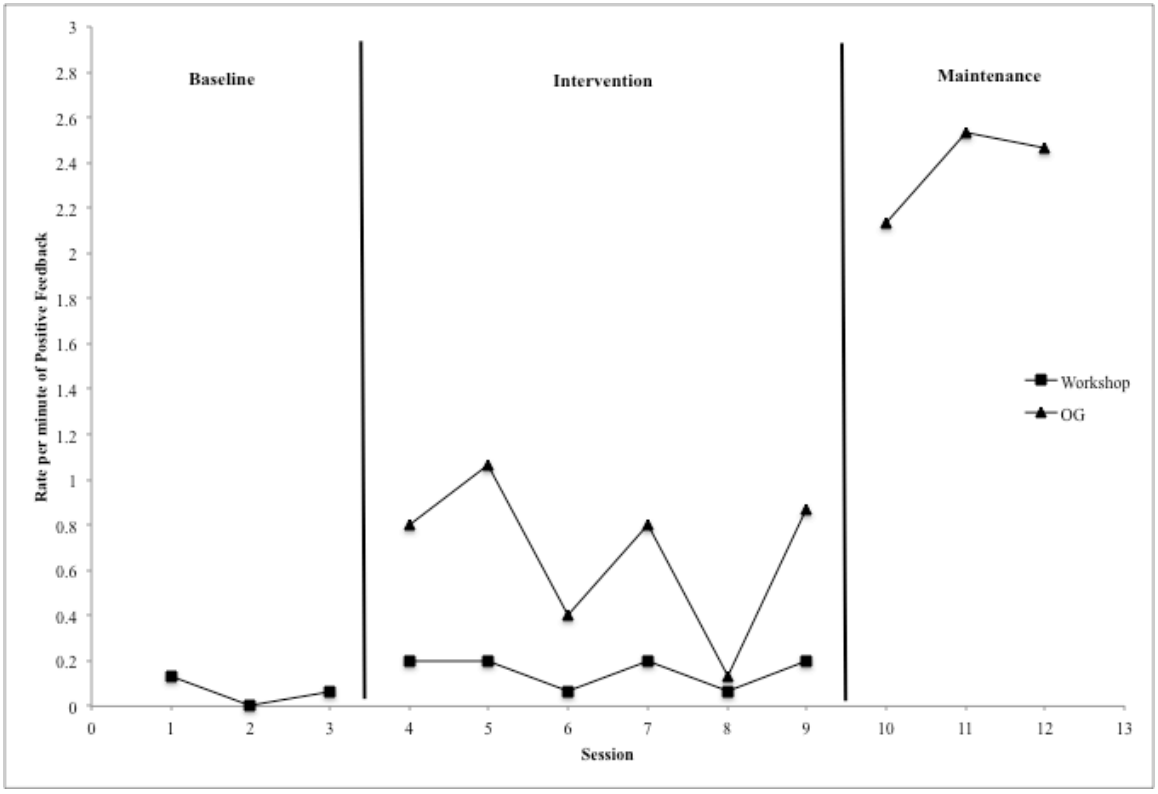
During intervention, the level of positive feedback statements during the workshop reading instruction condition ranged from 0.07 to 0.20 with a mean of 0.15 and a stable trend. In comparison, the level of positive feedback statements during the Orton-Gillingham (OG) reading instruction condition ranged from 0.13 to 1.07 with a mean of

0.68 and a slight downward trend. Again, there was one overlapping data point (session 8) where there was a day of low interobserver agreement or reliability (IOA). Data collectors were retrained, and an additional day of intervention IOA was collected. Excluding this one outlier point, the mean level of positive feedback statements is 0.79 with a slight downward trend.

OG reading intervention was continued during maintenance. The level of positive feedback statements during maintenance ranged from 2.13 to 2.53 with a mean rate per minute of 2.37 and a fairly flat trend. Data for positive feedback statements with Teacher 1 are summarized in Figure 8.

Figure 8.

Teacher 1 Positive Feedback Statements.



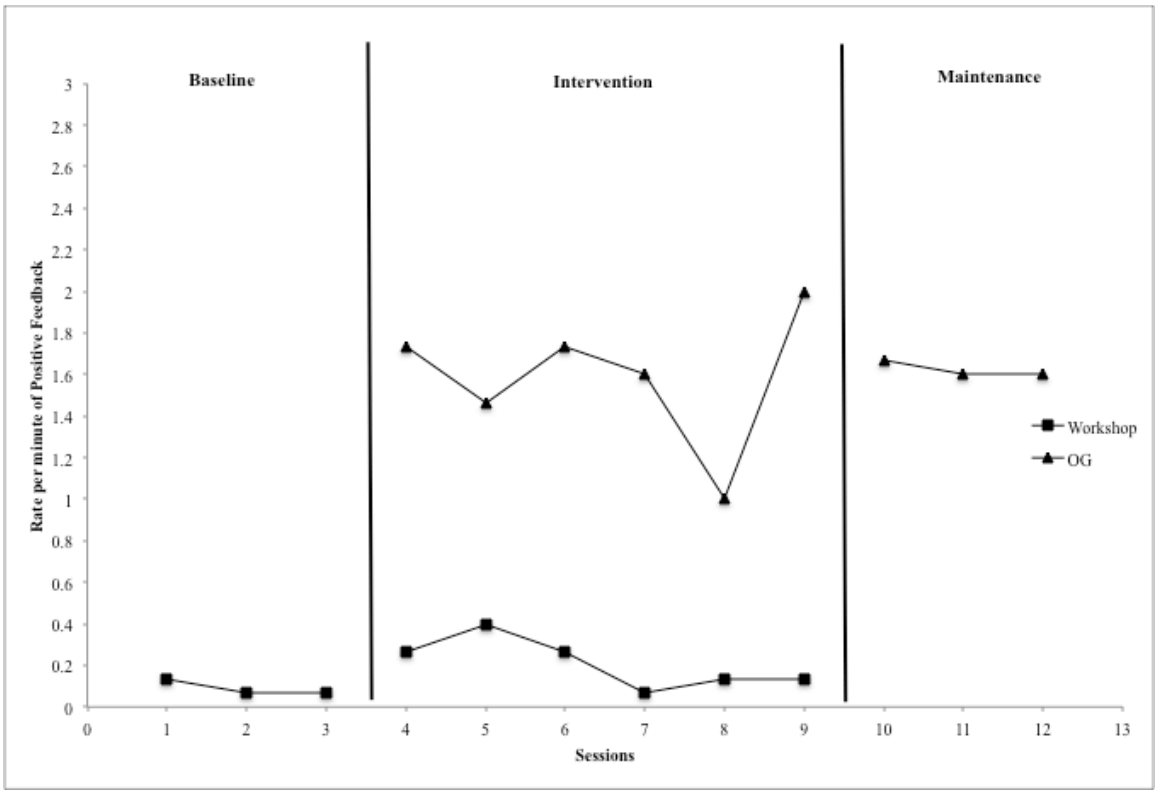
Teacher 2. During baseline the level of positive feedback statements provided by teacher 2 ranged from 0.07 to 0.13 with a mean rate per minute of 0.09 positive feedback statements during baseline with a flat trend.

During intervention, the level of positive feedback statements during the workshop reading instruction condition ranged from 0.07 to 0.40 with a mean of 0.21 and a flat trend. In comparison, the level of positive feedback statements during the Orton-Gillingham (OG) reading instruction condition ranged from 1.00 to 2.00 with a mean of 1.59 and a flat but variable trend.

OG reading intervention was continued during maintenance. The level of positive feedback statements during maintenance ranged from 1.60 to 1.67 with a mean rate per minute of 1.62 and a flat trend. Data for positive feedback statements with Teacher 2 are summarized in Figure 9.

Figure 9.

Teacher 2 Positive Feedback Statements.



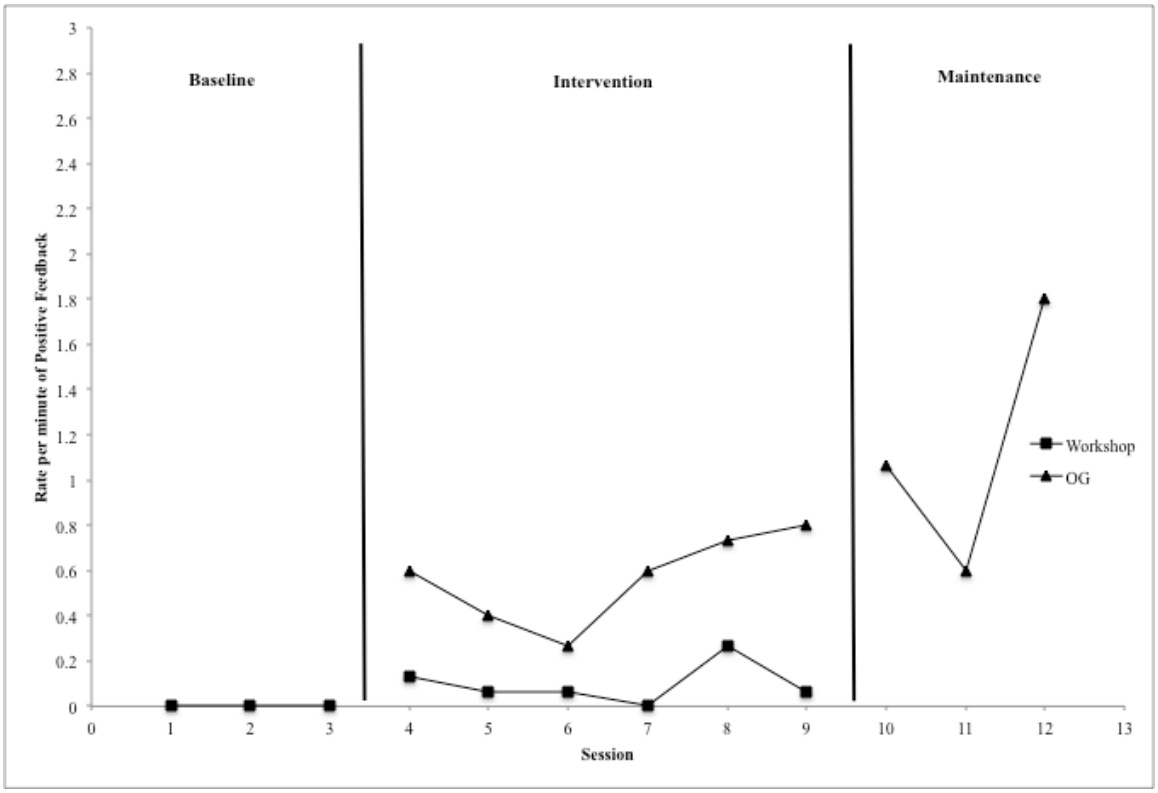
Teacher 3. During baseline the level of positive feedback statements provided by teacher 3 ranged from 0.00 to 0.00 with a mean rate per minute of 0.00 positive feedback statements during baseline with a flat trend.

During intervention, the level of positive feedback statements during the workshop reading instruction condition ranged from 0.00 to 0.33 with a mean of 0.10 and a flat trend. In comparison, the level of positive feedback statements during the Orton-Gillingham (OG) reading instruction condition ranged from 0.33 to 0.80 with a mean of 0.57 and a slight upward trend.

OG reading intervention was continued during maintenance. The level of positive feedback statements during maintenance ranged from 0.60 to 1.80 with a mean rate per minute of 1.15 and an upward trend. Data for positive feedback statements with Teacher 3 are summarized in Figure 10.

Figure 10.

Teacher 3 Positive Feedback Statements.



Across all teachers the average rate per minute of positive feedback during baseline was 0.05. During intervention the mean of the workshop condition was 0.15 while the mean of the OG condition was 0.95. Thus the difference in teachers' positive feedback between the workshop condition and the OG condition averaged 0.80 per minute.

Interobserver Agreement

Data collectors conducted interobserver agreement (IOA) during 22% of observation sessions across all conditions of the alternating treatments design (baseline, intervention, and maintenance). The overall mean IOA for all variables was 84%. The IOA for teacher provided OTRs was 96% (range, 50%-100%); for teacher provided

positive feedback, it was 91% (range, 0% - 100%); and for student's active engagement, it was 82% (39% - 100%).

There was one low IOA data point for active engagement during the intervention conditions. The lead data collector noted that she thought IOA might have been low because of an issue with interpretation of the start and finish of the 5-second timeframe between active and passive agreement. Data collectors were retrained, with emphasis on the 5-second timeframe. An additional day of intervention IOA was collected to demonstrate that the inconsistency in data was due to data collector error and not the intervention. Excluding the single outlier session, the IOA for student's active engagement were 97% (range, 78% - 100%) with an overall IOA of 97%.

Fidelity of Implementation

The individual teacher checklist's were created during baseline for the general reading condition and Orton-Gillingham checklists were based on the implementation of appropriate steps of implementation as outlined by Orton-Gillingham. The corresponding checklists were completed during the respective intervention conditions for implementation fidelity. Both conditions were implemented with 100% fidelity across the 5 observation sessions.

Social Validity

To evaluate teachers' perceptions and acceptability of using Orton-Gillingham Reading Instruction to increase students' active engagement each teacher was asked to complete a modified Intervention Rating Pofile-15 (IRP-15; see Appendix D for the Original IRP-15 by Martens et al., 1985 and the modified pre-and-post IRP-15) both before and after the intervention. The survey included 15 questions that the teachers

answered on a scale ranging from 1 (strongly disagree) to 6 (strongly agree). Table 5 provides the teacher's results from the pre-intervention survey and Table 6 provides the teacher's results from the post-intervention survey. Results are reported with the range of responses and as an average (mode) of the three teachers responses question-by-question comparison.

Table 5.

Pre-Intervention IRP-15

Survey Item	Mean	Range
1. This is an acceptable intervention for the child's problem behavior and academic needs.	5	5
2. Most teachers would find this intervention appropriate for students' academic and behavioral needs.	5	5
3. This intervention should be effective in changing the child's achievement and behavior.	5	5
4. I would suggest the use of this intervention to other teachers.	5.6	5-6
5. The child's behavioral and academic needs are severe enough to warrant use of this intervention.	5.3	5-6
6. Most teachers would find this intervention suitable for the academic needs and behavior	5.6	5-6

problem described.		
7. I would be willing to use this intervention in the classroom setting.	5.6	5-6
8. This intervention should not result in negative side effects for the child.	5.6	5-6
9. This intervention is appropriate for a variety of children.	5.3	5-6
10. This intervention is consistent with those I have used in the classroom.	5	5
11. The intervention is a fair way to handle the child's academic needs and problem behavior.	5	5
12. This intervention is reasonable for the student's academic needs and behavior problems.	5	5
13. I like the procedures used in this intervention.	5.3	5-6
14. This intervention should be a good way to handle the child's behavior and academic needs.	5	5
15. Overall, this intervention should be beneficial for the child.	6	6

Table 6.

Post-Intervention IRP-15

Survey Item	Mean	Range
1. This was an acceptable intervention for the child's problem behavior and academic needs.	6	6
2. Most teachers would find this intervention appropriate for students' academic and behavioral needs.	6	6
3. This intervention was effective in changing the child's achievement and behavior.	6	6
4. I would suggest the use of this intervention to other teachers.	6	6
5. The child's behavioral and academic needs were severe enough to warrant use of this intervention.	5.6	5-6
6. Most teachers would find this intervention suitable for the academic needs and behavior problem described.	5.6	5-6
7. I would be willing to use this intervention in the classroom setting.	6	6
8. This intervention did not result in negative side effects for the child.	6	6
9. This intervention is appropriate for a variety of children.	6	6

10. This intervention is consistent with those I have used in the classroom.	5.6	5-6
11. The intervention was a fair way to handle the child's academic needs and problem behavior.	5.6	5-6
12. This intervention was reasonable for the student's academic needs and behavior problems.	5.6	5-6
13. I like the procedures used in this intervention.	6	6
14. This intervention was a good way to handle the child's behavior and academic needs.	5.6	5-6
15. Overall, this intervention was beneficial for the child.	6	6

CHAPTER V

DISCUSSION AND FUTURE DIRECTIONS

The purpose of this dissertation research study was to extend the research regarding how explicit instruction in reading affects active engagement for students with challenging behaviors. In order to do so, Orton-Gillingham (OG) Reading Instruction was implemented with 1st grade students identified with behavioral challenges in the general education classroom and the effects on target student active engagement was assessed. Results were presented in Chapter 4 for the following research questions:

1. Does the implementation of the IMSE Orton-Gillingham Reading Instruction program increase student engagement for elementary students with challenging behaviors?
2. What is the teacher perception (social validity) of the implementation of the IMSE Orton-Gillingham Reading Instruction program?

A functional relation was demonstrated between the implementation of the Orton-Gillingham Reading Instruction program and students' active engagement. All students' active engagement increased over baseline during OG implementation. In comparison, active engagement decreased or remained stable over baseline under the workshop reading instruction condition. Additional data on collected on teacher behavior show that teacher provided opportunities to respond (OTR) and positive feedback statements were consistently higher during the OG condition. During maintenance, which involved continuation of OG intervention alone, student active engagement levels and teacher's use of OTR and positive feedback remained stable with or increased over the intervention means.

Limitations

While this study provides some significant contributions to the literature there are limitations that mediate interpretation. First, the explicit instruction program Orton-Gillingham was implemented and compared to a workshop instruction model in an alternative treatments design. However, it was not compared to any other Direct or explicit instruction reading method or strategy. Further, OG is an instructional package with multiple components. Thus, it is not possible to attribute these results specifically to OG as opposed to the individual teacher behaviors inherent within OG and typically associated with Direct Instruction.

Another limitation of this study is the degree to which the results can be generalized outside of the conditions of the study (Kazdin, 2011). As a single subject study the results cannot be generalized without both direct and systematic replications. Systematic replications would need to vary both age and content as the study was conducted in the 1st grade general education classroom and was focused specifically on reading.

Interobserver Agreement can also be considered a limitation. While the overall interobserver reliability rate was high, there was one session that produced extremely low reliability. While the problem was immediately identified and effectively remedied, results caused overlapping data for student 1 and teacher 1 during implementation of OG reading instruction conditions (session 8). To account for this problem an additional day of intervention data was collected. Excluding the one-outlier data point, a functional relationship was demonstrated across all variables examined. Still, the abnormality in procedures must be considered as a limitation.

Research Question 1

Does the implementation of the IMSE Orton-Gillingham Reading Instruction program increase student engagement for elementary students with challenging behaviors?

Data described in chapter 4 support the notion that an increase in students' active engagement occurred during the implementation of Orton-Gillingham reading instruction. As noted the average student engagement level during OG was 31.6%. This means that during the 15 minutes of observed instruction students were actively engaged with instruction an average of 4.75 minutes. In comparison, the workshop reading instruction condition averaged 7% of active student engagement, or 1 minute of the 15-minute period. Extrapolating this across time, these findings indicate that students receiving OG instruction would be actively engaged with instruction 15 more minutes per hour of reading instruction (3.75 minutes x 4 15-minute periods in an hour), 1.25 additional hours per week (15 minutes x 5 days), 5 hours per month (1.25 hours x 4 weeks) and 45 hours per school year (5 hours x 9 months). A summary of this extrapolation is presented in Table 7.

Table 7.

Extrapolating Active Engagement Differences Across Time

	Minutes of Active Engagement				
	15-Min	Hour	Week	Month	Year
Orton Gillingham	4.75	19	95	380	3,420
Workshop	1	4	20	80	720
Difference	3.75	15	75	300	2,700

	(1.25 hrs)	(5 hours)	(45 hrs)

This is important because we know from research as detailed in chapter 2 that an increase in active engagement with instruction is highly predictive of an increase in students' academic achievement. While the research question does not specifically address what components of OG instruction are responsible for any observed differences in active student engagement, data collected on teacher provision of opportunities for student responses and delivery of feedback may offer some insight into this matter. This information is coincidental and not at all controlled but may be helpful in hypothesizing for future research.

Differences in Opportunities to Respond

Data described in chapter 4 supports the notion that an increase in OTRs occurred during the implementation of the Orton-Gillingham reading instruction. As noted the average rate per minute of OTRs during OG was 3.43. This means that during the 15 minutes of observed instruction teachers provided an average of 51.45 OTRs. In comparison, the workshop reading instruction condition averaged a rate per minute of 0.90 OTRs, or 13.5 OTRs during the 15-minute period. Extrapolating this across time, these findings indicate that teachers using OG instruction would provide 151.80 more OTRs per hour of reading instruction (51.45 - 13.5 = 37.95; 37.95 x 4 15-minute periods in an hour), 759 additional OTRs per week (151.80 OTRs x 5 days), 3,036 OTRs per month (759 hours x 4 weeks) and 27,324 OTRs per school year (3,036 hours x 9 months). A summary of this extrapolation is presented in Table 8.

Table 8.

Extrapolating Rates of Opportunities to Respond Across Time

	Rate of Opportunities to Respond per Minute				
	15-Min	Hour	Week	Month	Year
Orton Gillingham	51.45	205.8	1,029	4,116	37,044
Workshop	13.5	54	270	1,080	9,720
Difference	37.95	151.8	759	3,036	27,324

Because engagement is an important predictor of academic achievement, it is logical to hypothesize that the number of opportunities teachers present for students to respond during instruction may affect student engagement.

Differences in Feedback

Data described in chapter 4 supports the notion that an increase in positive feedback occurred during the implementation of the Orton-Gillingham reading instruction. As noted the average rate per minute of positive feedback during OG was 0.95. This means that during the 15 minutes of observed instruction teachers provided an average of 14.25 positive feedback statements. In comparison, the workshop reading instruction condition averaged a rate per minute of 0.15 positive feedback statements, or 2.25 positive feedback statements during the 15-minute period. Extrapolating this across time, these findings indicate that teachers using OG instruction would provide 48 more positive feedback statements per hour of reading instruction (14.25 – 2.25 = 12; 12 x 4 15-minute periods in an hour), 240 additional positive feedback statements per week (48 positive feedback statements x 5 days), 960 positive feedback statements per month (240 hours x 4 weeks) and 8,640 positive feedback statements per school year (960 hours x 9 months). A summary of this extrapolation is presented in Table 9.

Table 9.

Extrapolating Rates of Teacher Feedback Across Time

	Rate of Feedback per Minute				
	15-Min	Hour	Week	Month	Year
Orton Gillingham	14.25	57	285	1,140	10,260
Workshop	2.25	9	45	180	1,620
Difference	12	48	240	960	8,640

As discussed in Chapter 2, teacher feedback is another strategy that is known to be associated with achievement and other positive student outcomes. Of course, the ability to provide positive feedback to students is limited by the number of responses students make. Given this, it is logical to hypothesize that opportunities for teachers to provide feedback are affected by the number of opportunities teachers provide for students to respond. Again, higher rates of effective teaching strategies observed during the OG instruction offer a compelling explanation for differences in student active engagement.

Research Question 2

What is the teacher perception (social validity) of the implementation of the IMSE Orton-Gillingham Reading Instruction program?

Overall, the teachers' responses from the social validity measure Intervention Rating Profile-15 (IRP-15) pre-to post-intervention were very positive, indicating that all teachers were satisfied with the Orton-Gillingham Reading Intervention program and felt it was a meaningful intervention for students. As described in chapter 4, each teacher was asked to complete a modified Intervention Rating Pofile-15 (Martens et al., 1985)

both before and after the intervention. The survey included 15 questions that the teachers answered on a scale ranging from 1 (strongly disagree) to 6 (strongly agree). Chapter 4 reports results with the range of responses and as an average (mode) of the three teachers responses question-by-question comparison for both Pre-and-Post Intervention IRP-15. The responses are similar to previous intervention studies examining the effects of increasing OTRs (Blood, 2010; Carnine, 1976; Davis & O'Neill, 2004; Haydon & Hunter, 2011; Haydon et al., 2010; Sutherland, Alder, & Gunter, 2003; Sterling et al., 1997; Lambert et al, 2006; West & Solane, 1968) and positive feedback on student engagement (Allday et al., 2012; Duchaine, Jolivette, & Fredrick, 2011; Hawkins & Heflin, 2011; Matheson & Shriver, 2005; Myers, Simonsen, & Sugai, 2011; Piscareta et al., 2011; Reinke et al., 2007; Simonsen Myers, & DeLuca, 2010). In comparison to the pre IRP-15, teacher 3 increased her rating of the OG procedures, while both teachers 1 and 2 rated OG highly at both pre-and-post intervention. Anecdotally, post-intervention implementation of Orton-Gillingham reading instruction, all teachers indicated it was an acceptable intervention for the student's problem behavior and academic needs.

Summary

The way in which teachers present instructional programs can make a big difference in their own behavior as well as the outcomes for their students. This study has presented evidence that OG reading instruction offers an explicit instruction program that, when implemented with fidelity, increases students' active engagement with instruction. In order for active engagement to increase for students, OG implementation sets the teachers' up to provide more OTRs and positive feedback embedded in the instruction. The data presented in Table 7 extrapolates totals for students' active

engagement levels over time as a difference between OG and the workshop reading condition. Over the course of the school year, the difference in the increase of student active engagement when OG is implemented is 45 hours more than workshop condition. The amount of time of active student engagement is imperative information to consider when choosing an explicit instruction program as research has clearly demonstrated that the greatest predictor of academic achievement is the time a student is actively engaged with instruction (Greenwood et al., 2002).

Similarly, The data presented in Table 8 extrapolates teacher OTR levels over time as a difference between OG and the workshop reading condition. Over the course of the entire school year, the difference in teachers' occurrences of OTRs when OG is implemented is 27,324 occurrences more than during workshop condition. Opportunities to respond increase students' engagement with instruction, providing more OTRs over the course of a year provides students more opportunities to interact with instruction. When receiving increased OTRs, students' active engagement increases, ultimately improving academic achievement.

Finally, The data presented in Table 9 extrapolates teacher positive feedback levels over time as a difference between OG and the workshop reading condition. Over the course of the entire school year, the difference in teachers' positive feedback statements when OG is implemented is 8,640 occurrences. In conjunction with OTRs, the increase in positive feedback occurrences provides an increase in the opportunities for positive feedback statements. Along with OTRs, an increase in positive feedback statements is one of the effective methods of enhancing the probability of success (Hattie, 1992).

In general, the most effective strategies are those in which the teacher is able to engage the student with the content of instruction (Berliner, 1990; Greenwood et al., 2002; Hattie, 2009; Pianta et al., 2002). The program a teacher selects to use for reading instruction has huge implication for the degree to which there will be opportunities for promoting increased active student engagement. The data provided in chapter 4, and extrapolated in the tables above, highlight the types of advantages inherent in explicit instruction programs such as Orton-Gillingham. That is, the advantages of using programs that incorporate increased OTRs and positive feedback to promote active students engagement.

Future Directions

This study has provided evidence for the use of the explicit instruction-reading program Orton-Gillingham but further research is needed to assess what elements of OG contribute to its results. Such further questions would be highly valuable additions to research and extensions of this study: What is it about OG that makes active engagement increase so much over general reading workshop instruction?

However, it is not clear whether any other Direct Instruction, or explicit instruction reading method would provide similar results in terms of student active engagement levels. As a first step, direct replication of this study is needed to validate the findings and strengthen the research base for explicit reading instruction implementation for students with challenging behaviors or E/BD.

It is unclear what effects this intervention may have on longer-term or more comprehensive reading achievement for these students. In order to better understand these implications a longer-term study is necessary to better address reading

comprehension and academic achievement. For example, the Dynamic Indicators of Basic Early Literacy Skills (DIBELS, Good & Kaminski, 2002) would provide additional information as to the longer-term effects of the Orton-Gillingham reading program. Further, an alternative to OG could be used to help isolate the key variables within the program. Explicit instructional programs in reading that involve the key teacher behaviors associated with Direct Instruction-reading program would be helpful in this effort.

Additionally, because this study only included reading, we don't know if the results would be similar for another subject content area (i.e., mathematics). The results of the present study provide evidence for the use of an explicit instruction-reading program. In-order to generalize the results to other content area subjects, future study should be replicated across a range of content areas (e.g., mathematics, writing, spelling, language . This would provide evidence that the elements of explicit instruction are generalizable to alternative content area subjects (Hattie, 1992).

Finally, another area of future research should involve the implementation of OG with different student populations (e.g., intellectual disabilities, learning disabilities) and age groups. The data from this study supports the use of OG with first grade students with challenging behaviors at-risk for E/BD. In order to be able to more readily generalize the positive effects of the elements of explicit instruction incorporated in OG across students, the same study needs to be systematically replicated across both age groups and students with intellectual disabilities, learning disabilities, and other populations.

This study extended previous research by comparing a specifically designed explicit instruction program (OG) to general workshop reading instruction, reinforcing previous research on the importance of increased opportunities to respond and positive feedback statements in increasing the level of student active engagement with instruction. This addition to the research is important because when students are actively engaged with instruction (i.e., reading instruction), then their academic achievement increases, leading to students being more successful readers. If teachers' ultimate goal is to teach students to be successful readers, and they are given the ability to select a reading instruction program from among various options, the results of this study suggest that Direct Instruction is a high-probability option for student success. Explicit/Direct Instruction has been proven an effective instructional method in many studies since the completion of Project Follow Through in 1995, yet is not being widely implemented. Which begs the question, why not? Through the completion of this dissertation study, my intention was to make an evidence-based case for teachers to implement an explicit or Direct Instruction reading program for students with challenging behaviors or at-risk for E/BD by comparing it to a general reading instruction program. The success highlighted in this study by implementation of Orton-Gillingham reading program should add to the literature in support of explicit instruction, and hopefully aid in classroom implementation of such programs.

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Appendix A

Data Collector Coding Manual

ACADEMIC AND BEHAVIORAL RESPONSE TO INTERVENTION
ABRI

M.O.O.S.E.S
DATA COLLECTOR CODING MANUAL
and TRAINING PROCEDURES

TRAINING and RELIABILITY PROCEDURE

Use the following strategy to train data collectors to become reliable.

- Go over CODE DEFINITIONS and CODING RULES daily. This will enforce the definitions and rules so there will not be a tendency to stray from the established system. Everyone is prone to observer drift and studying the definitions and rules daily will help with accuracy.

- Start with short sessions of observations using the training DVD. With each scenario, the target student will have a red box to indicate which student is the target. The screen will present a 5 second count-down to start. Have all students collect data at the same time.

- On first practice session, have data collectors watch the classroom scenario without attempting to collect data. As events occur, the trainer should call out the appropriate code. Stop the DVD if necessary to discuss why certain events would be coded in the way called out. Areas that data coders typically need practice recognizing are correction, negative feedback and OTR Group.

- After watching two scenarios and calling out the appropriate codes, have data collectors code the behaviors using a paper and pencil format. After each scenario, check the recorded data for reliability

- Continue to practice on the two familiar scenarios until the data collectors have achieved 80% reliability. Once they have achieved 80% reliability, have them code the two scenarios using the handheld PDA and MOOSES (Multi-Option Observation System for Experimental Studies) software. After each scenario, print out the recorded codes and talk through the data line by line. Compute reliability. Once data collectors have achieved 80% reliability, have them record data using the two scenarios they have not observed. Once they have achieved 80% reliability on the second set of scenarios, they are ready to begin training with live observations.

- Start with short sessions of live observations, approximately 10 minutes. If there is difficulty getting reliable, shorten the session to 5 minutes. In between each session, leave the observation area and talk through the data line by line immediately following that particular session.

- Try to do as many short sessions in the time allocated. In a 30-minute period, you should be able to get at least four 5-minute sessions in with a discussion in between. The more sessions scored will increase the chances of becoming reliable across all codes in a more reasonable time frame.

- Immediately after the coding session, run the inter-observer agreement. This will aid in seeing some weaknesses. During this period an error analysis needs to be done on each session that is not reliable so that the problem areas are even more magnified. Brainstorming on examples, going over tapes, and studying the code definitions, can emphasize concentration on these codes.

PROTOCOL FOR DATA COLLECTION

1. *Each time you collect data, you will need a **handheld PDA computer and a folder with post-it notes.** Always check your hand-held power supply before leaving the office. If it is necessary to use the adapter, ask the school staff quietly if you can access an outlet and still remain close to the target.*

2. *Arrive early enough to the observation site to determine the most optimal place to sit. Position yourself in close proximity to the target student so you can hear what is said and you have a clear vision of student behavior and activity. If you are taking reliability with another coder, consider where to position both of you without affecting the flow of the classroom and regularly occurring activities. Try not to disturb the normal interactions of the environment. After the initial visit, you do not need talk to the staff upon entering the environment (unless you need specific information). It is okay to acknowledge staff; however, you should not engage him/her in a conversation or disturb the site flow. The same holds true for the target student and peers as well. You can expect peers to be curious about your presence, but DO NOT talk to them at length. If a peer tries to engage you, politely tell him/her that you cannot talk right then, that you have work to do.*

3. *Enter/exit the area as inconspicuously as possible. Avoid taking extra items (not required for data collection) with you, and make sure that you have all the necessary materials prior to entering the room. Never respond to student behavior (e.g. laughing). Similarly, you should not respond when negative things occur such as staff administered punishment or acts of aggression. We are strictly observing events as they happen, and do not want our actions in any way to resemble judgment or criticism. If you are disturbed by what you have observed, you may discuss it with us, but no one else.*

4. *After you are situated in the environment, turn on your handheld and begin collecting data.*

A few miscellaneous things…

Always be on time—Remember that we are guests and are there at the convenience of staff. If you are going to be late, you should call the site to let the staff know. Phone the project coordinator at the earliest possible time (i.e. the night before) if you are unable to come to work due to illness or an emergency so we can try to find a replacement for your scheduled sessions.

Confidentiality- Remember that we have **GUARANTEED** confidentiality to all participants in the study. You should never discuss anything with anyone other than project staff. It is never appropriate to identify participants in the study to others, or to discuss what you have observed during the course of the study. It is also imperative that we remain prompt, courteous, and cooperative with the staff of the study.

STEPS FOR USING MINI-MOOSES

1. Turn on hand-held using power button on upper right hand side.
2. Using the stylus choose **Start** and then **MiniMoose3**
3. Choose **File** (bottom left hand corner of screen) and **New File**
4. Using the document, *CARS File Name Codes* follow the steps to name the 20 digit file name
5. On the same screen choose **Folder** and "*Your Name* Data File" (ex. Parish Data File) and then **Save**
6. Under the **Header** line write "one" or "mul" depending on the number of teachers in your room then **OK** UNLESS you are coding a reliability observation. If so, in the Header line the primary observer opens the keyboard (middle of the screen) adds one space and puts "pri". If the observer is not the primary observer code, "rel".
7. Sliding the bottom cursor to the right fill in the demographic information. Double check.
8. Before the coding session begins choose the Whole Group, Passive Engagement and Teach as the default.

9. From the lower part of the screen choose **Timer**. When coding with a partner count down, "3-2-1-**Start**"
10. When the observation is up at 15 minutes, in the middle of the screen a box appears that states that the session is over. In the upper right corner of that box click on "OK".
11. On the bottom left of the screen choose **File** and then **Exit**.
12. Your observation file is now saved.

DIRECTIONS FOR SENDING DATA FILES

1. Using the USB cord, attach the hand-held to your computer.
2. When the *Windows Mobile Devise Center* Screen appears, choose:
   Connect without setting up your device
3. From the options given choose:
   File Management and then
   Browse the contents of your device
4. After locating the data files to be sent, drag them onto your desktop. Exit out of the Windows Mobile Devise and disconnect hand-held.
5. Open and compose an e-mail to Regina Hirn (regina.hirn@louisville.edu) attaching the necessary data files.
6. When sending observations, in the subject line write: School Name **Data Files**. Example: Milton Data Files. If sending a reliability file, in the subject line write: *School Name Reliability—MP & NS*
7. Do not attach both reliability files and data files in the same email to Regina. First send your data files and then in a separate email send your reliabilities.
8. If possible send all observations to Regina Hirn the same day they were completed.
9. If you had to use the FIX key during an observation clean up the file before sending it. Fixing a file:
   a. On the handheld open Office Mobile
   b. Choose Word Mobile
   c. Select file that needs to be fixed
   d. Find the word FIX and delete the code before the word as well as the word FIX
   e. Choose OK

ABRI Direct Observation Codes

INSTRUCTION VARIABLES

Instructional Context **Duration (5 second count)**			
Mutually Exclusive At least One Field Must be Toggled On	"WG" *SET AS DEFAULT	"Whole Gr"	Whole group is defined as the target student being expected to participate in an activity that involves the majority or the entire class and in which the teacher is providing the students with direct instruction in academic content (e.g., reading, math, science lesson; social skills group). If target student is not participating due to timeout or some other disciplinary action taken by the teacher, score the activity as whole group. *Examples:* • *All students are listening to a teacher lecture.* • *All students are doing a math worksheet with the teacher (even if given a few minutes between instructions to complete item).* *Non-examples:* • *Teacher has completed instruction and has directed students to complete the assignment on their own.* • *Resource or Pull-Out Service (if less than 10)* • *If class is less than 10 code **SG Teach***

	"SG"	"SG Peer"	Small group peer is defined as the target student being expected to participate with one or more peers with out being teacher directed. During this activity, the students are discussing, collaborating, and working together without the teacher. Examples: • Target and 3 peers are asked to discuss a topic for a few minutes. • Target and a peer work together on a lab activity. • Students break up into pairs to work on Math Jeopardy Non –examples: • Students are working together in small groups yet the target student has been assigned an independent task (leave as ind) RULE: Only change to "Sm-G Teach" if teacher is **leading** the instruction not if they stop by and listen-in, or monitor.
	"SG"	"SG Teach"	Small group teacher is defined as the target student being expected to participate in a group with a portion of the students in the class (at least one other student) and an adult. During this activity the adult is providing the students in the group with **direct** instruction**. All rooms that have 10 or less students code SG Teach.** *Examples:* • *Subset of class (that includes target) is following an academic lesson led by the teacher at a table in the back of the room.* • *Instructional groups where students share a common activity but different tasks with different instructions about what to do led by teacher.* • *Students are divided into cooperative learning groups led by teacher.* • *Groups are located at work or interest stations in the room, each of which is devoted to a different activity, with different tasks, and different instructions about what to do with a teacher.* *Non-example:* • *Target student asks peer a task related question or looks at the work of a peer.*
	"IG"	"Ind Wrk"	Independent work is defined as the target student being expected to sit at his or her seat (on the floor, at the blackboard) and work independently. This may include reading, completing worksheets, taking a test, etc. *Example:* • *Each student working on academic tasks by themselves for seatwork with no teacher instruction.* • *Target student is engaged in individual study.* • *Target student is using the computer without teacher directions* • *Independent Reading* *Non-example:* • *Teacher is working over the shoulder of the target student helping them with a problem. (Code as "One-on-One")*
	"OG"	"1-on-1" No 5 second	One on one is defined as the target student being provided individual direct instruction or attention in academic content by an adult. Code "**1-on-1**" immediately; do not wait for the five second count. *Examples:*

		count/Code as starts & stops	• *A teacher and the target student are working on a PowerPoint together* • *The target student ONLY is receiving feedback from the teacher about a worksheet they just completed.* • *Spanish teacher comes alongside student and quizzes vocabulary* *Non-examples:* • *Teacher conducting a round robin with geography facts in whole group* • *Teacher is playing trivia Jeopardy with the class where the teacher stops on one student for a period of time exchanging dialogue in efforts to clarify their response.(code as otr ind during whole group)* • *Positive/Negative Feedback or corrections*

TEACHER OBSERVATION VARIABLES

Teacher Behavior **Duration**			
Mutually Exclusive At least One Variable For Each Field Must be Toggled On	Code	Descriptor	Definition
	"TI"	Teaching (Teach) DEFAULT	Teacher is engaged in instruction by explaining a concept, demonstrating a principle, or modeling a skill or activity to group that includes target student. The teaching must be academic and furthering the lesson/objective of class. Eyes on students. Instructing/Modeling/Monitoring. *Examples:* • *Teacher is lecturing to the whole class during a history lesson* • *Teacher is oriented at the front of the class overseeing a video being shown* • *Teacher is demonstrating how to perform a lab assignment to the whole class* • *Teacher is working with target student on explaining a concept where the target student simply nods or gestures* • *Teacher is giving directions to a small group of individuals on what sequence of events need to be accomplished and presented on for the group project* • *Operating PowerPoint or writing on board* • *Teacher stops and briefly talks with various students around the room asking how they are doing; if they need any help, providing feedback.* *Non-examples:* • *Teacher is asking class about weekend plans* • *Teacher is talking about a basketball player and the great plays he made at last night's game.* • *Teacher is on the phone* • *Teacher is working on the computer* • *Teacher steps out of the classroom to speak to another teacher.*
	"TN"	Not Teaching (Not-Tea)	Teacher is not engaging students and is involved in independent task with no interactions with student. Use "Not-teach" when teacher is talking off-topic or reprimanding another student for more than 5 Sec.

			Examples: • *Students working in small groups or independently while teacher works at desk or on computer or other task.* • *Teacher is asking about Friday night's Basketball game.* • *Teacher is working on computer at his/her desk.* • *Teacher is on the phone with eyes away from the class* *Non-examples:* • *Teacher is reading chapters from novel out loud to class.*

Teacher Behavior **Frequency**			
Frequency Counts	Code	Descriptor	Definition
	"RG"	OTR Group (OTR Gr)	Teacher (or tutor) provides an opportunity to respond that is curriculum relevant that is directed at whole class or small group that includes the target student. OTR must be instruction related and not a social question, a question within the context of negative feedback or a direction to perform a task. This question is not rhetorical or instructional. Students must have to think about answering the question. OTR must be relevant to curriculum**. Teacher is asking a question related to lesson. Provides a task with curricular insight.** *Examples:* • *Teacher asks questions and looks for volunteer to answer, e.g. "Who can list three events that took place just prior to the invasion of Normandy?" "Is Sudan a landlocked country?" "I am thinking of two specific precious metals that are found in this area, who can help me find an answer?"* • *Teacher asks questions as above yet specifies a group that target student is in "Can someone from group 1 tell me the answer?"* *Non-examples* *Teacher tells students to get out their Math book* • *Teacher calls on several students by name other than the target student.* • *Teacher asks "Didn't you all hear me ask for quiet?"* • *Teacher asks a question to a small group that doesn't include the target student*
	"OT"	OTR Individual (OTR Ind)	Teacher provides an opportunity to respond that is directed to target student. OTR must be instruction related and not a social question or a question within the context of negative feedback. This OTR must be curriculum drive**. Teacher asks a question to the target student related to the lesson.** *Examples:* • *"Lyle, explain the difference between a sedimentary and an igneous rock".* • *"Mike, tell me how to work this algebra problem."* • *"Ian, what branch of government is responsible for making laws?"* • *"Please explain further your rationale, Grace."* *Non-examples:* • *Teacher asks questions and looks for volunteer to answer, e.g. "Who can list three events that took place just prior to the invasion of Normandy?" "Is Sudan a landlocked country?" "I am thinking of two specific precious metals that are found in this area, who can help me find an answer?" (OTR Group)*

			• *Teacher calls for volunteers and target has hand up yet doesn't get called on* *(code as OTR Group & Get Attention)* *Teacher asks "Did you have to work last night?"* *Teacher asks: What did you do this weekend?*
		Direction	Teacher provides a direction command that is directed at whole class or small group that includes the target student. Direction is not related to the contents of the class curriculum but to specific behavioral commands. Direction is an immediate command, no "if" or "when" statements. **A task with no insight**. Examples: • Sit down and get a pencil out • Take out your book and turn to page 14 • Go get your lunch • Look up at the agenda on the board . Non Examples: • Who can tell me why Melinda didn't get along with Rachel? • What part of this formula am I missing? • Think about this…Listen to this… • Turn to page 14 and put your finger on the word that begins with L
	"NF"	Pos Feed *GO Command*	Teacher gives the class or individual student feedback on an academic or social behavior that indicates the behavior/response is correct. Can be verbal or gestural. *Examples:* • *"Students who are copying down the objective and outline are showing they know how to get the task started, I respect their independence."* • *"Thanks for submitting the assignment; I'm pleased to see it."* • *"Everyone was in their seat and working on the warm-up problem when the bell rang, I appreciate your responsible self-management."* • *"Thanks for raising your hand first."* • *Great job!* • *"4" --- Acknowledging that 4 was the correct answer* *Non-examples:* *"Yes, you're right" to another student*
	"CR"	Negative Feedback Neg Feed	Teacher informs student that behavior/response is incorrect, but does not provide corrective feedback (e.g., "no" "stop that" "turn around" "quiet". Can be verbal or gestural.

		STOP Command	*Examples:* • *A teacher puts finger to lips and says, "SHH!"* • *"Stop bothering Kim."* • *"I told you to sit down."* • *Teacher raises her finger to her mouth to gesture students to be quiet.* • *Teacher asks Jan to "have a seat" when Jane gets of her seat during independent seatwork.* • *Teacher takes pencil/iPod/cell phone away from student who is playing with it and not following instructions.* • *No—telling the student that the academic answer he/she gave was wrong* *"Non-examples:* • *"Try harder on your math worksheet; I know you can do better."* • *Students come in to class after fire drill and teacher asks them to "take a seat".* • *"I want everyone's attention while I go over this example."*
		Correct *STOP & GO Command*	Teacher tells student why behavior/response is not correct and re-teaches correct behavior/response. **Teacher tells student why behavior/response is not correct and re-teaches correct behavior/response. Teacher states expectations and requires a demonstration of what he/she asked of them. Code "Correction: when the complete event has occurred: Teacher stops what is incorrect, reteaches, gives an opportunity for student to demonstrate and student responds appropriately.** *Examples:* • *Number 24 is wrong; can you look at it again and try again?* • *"Barbara, I see that you are texting on your cell phone; the school policy on cell phone use is clear. The phone should only be out at lunch and after 2:30."* • *"Shalita, you know that sleeping is not acceptable I my class, therefore what I would like to see you do if you have a question is ask me or a peer that you're working with for the answer."* • *"Victor, you know that we don't use those words in this class. A more appropriate response to get my attention would be to raise your hand or say Mrs. Smith, can you help me with this problem I am having difficulty with."* • *"Do not throw your garbage away from across the room. If you need to throw something away while I am lecturing feel free to get up and walk over to the waste basket."* • *Put that away and read your novel, show me.* • *Leave him alone and get back to work (and student begins to work)* *Non-examples* • *"You know better than that."* • *"Get busy."* • *Stop it! I've told you this twice already!*
		Acknowledge	Teacher answers question **or** acknowledges the student. Teacher responds to query from student, either academic or social. **Teacher can respond in a non-verbal way.**

		Example: • Teacher points to target student who has hand raised in response to OTR Group • Teacher answers students question about what time it is. Non-example: • Teacher tells student to be quiet • Teacher asks target student an instructionally related question (OTR Indiv.)

STUDENT OBSERVATION VARIABLES

Student Behavior **Duration**			
Mutually Exclusive At least One Variable Must be Toggled On	Code	Descriptor	Definition
	"AE"	S Act Eng	Student Active Engagement: Student is actively engaging with instructional content via choral response, raising hand, responding to teacher instruction, writing, reading, or otherwise completing assigned task. *Examples:* • *Target student is writing on an assigned worksheet page.* • *Target student is reading out loud with the class when directed to do so, following along with finger or eyes in text.* • *Target student is working on the computer assigned task from the teacher.* • *Target student is working in assigned group helping to complete a task.* • Watching a movie shown by teacher . *Non-examples:* • *Student is watching or listening* • *Target student is oriented towards the teacher or speaker and appears to be following instruction or course of events.* • *Student is sleeping*
	"PE"	S Pass Eng *SET AS DEFAULT	Student Passive Engagement: Student is passively attending to instruction by orientation to teacher or peer if appropriate. Examples: • Student is listening to lecture or watching presentation including pwpt or video • Student looks and listens to another student called on. • Head down on desk yet eyes oriented to teacher • Target student is oriented towards the teacher or speaker and appears to be following instruction or course of events. Non-examples: • Student has head down yet not looking at teacher • Student is reading silently (code as Act Eng) • Student looks and listens to a student talking off-task topic
	"OF"	S Off task	Student is neither actively engaged nor looking at the teacher but is not disrupting the class in any way (no negative behaviors). Student is neither actively engaged nor looking at the teacher and may or may not be disrupting the class. Expectations of the teacher are not being followed. Examples:

			• *Target student is out of seat without permission but not bothering anyone else.* • *Target student looking away from the teacher or instructional materials.* • *Target student not complying with a request (e.g., to open books, to look at board, to write an answer and does not appear to be thinking about the answer to write)* • *Target student has head down on desk with eyes closed.* • *Target student is texting a friend.* • *Target student is playing with iPod.* • *Non-examples:* *Student looks away and talks to peer for less than 5 seconds.* *Student silently watches video*
	"DT"	Down-time	There are no academic expectations of the target student or group target student is part of. Use down-time any time a reprimand or discussion with another student exceeds 5 sec without clear expectations. If student leaves class to go to the restroom/get a jacket/get her jacket, code Downtime. Examples: • At beginning or end of class no instruction has started and class is talking amongst themselves • Target student finishes an assignment or test and lays their head down as nothing else has been asked of him/her. • Teacher is instructing and steps away to answer phone or speak to someone at door **without** informing students of what to do ("work on… while I attend to this") • Student leaves room with permission from teacher (use restroom/get a drink of water) Non-examples: • Teacher is lecturing and student is sleeping or has head down (Off Task) • Teacher is instructing and steps away to answer phone yet tells class to "go ahead and get a start on the project and I'll be right back" • All class is waiting and talking prior to instruction yet target student gets homework out and completes • Teacher reprimands another student for more than 5 sec yet tells class to "keep working while I talk to Tim"

Student Behavior
FREQUENCY CODE

"OD"	Disruptive "Disrupt"	Student is neither actively engaged AND displays behavior that does or potentially could disrupt the lesson (e.g., out of seat; noises, talking to peer, making comments). Behaviors can range from low intensity (out of seat to sharpen pencil) to high intensity (making derogatory statements or destroying property). WHEN TO COUNT A NEW ONE: Code new event if topography changes (ie talking and then tapping) or if

		talking changes to new person or if 5 sec of pause or if other speaker (teacher or peer) respond then target talks again. *Examples:* *Cell phone talking or any use with music/noise* *Argumentative or Noncompliant Talk* *Negative Talk* • *Target student is out of seat without permission and taking to peer.* • *Target student is ripping or crumbling paper in loud way drawing attention from teacher and/or peers.* • *Target student is making noise drawing attention from teacher and/or peers.* • *Target student curses teacher or peers.* • *Target student makes threatening comments to teacher or peers.* • *Target student verbally refuses to complete assignment or comply with directions.* Loudly tapping pen or rocking in chair to extent it is drawing attention or has potential to draw attention and disrupt instruction Non-examples *Just cell phone use for texting (code as off task)* Sleeping Laying head down Not answering when called on Quietly tapping pen or rocking in chair if not distracting or drawing attention
	Get Attention	Student raises hand **or** asks question in an appropriate manner to elicit an answer (academic or social) from the teacher. Example: • Target student raises hand in class • Target student asks the teacher for more paper Non-example: • Student says a derogatory comment about assignment (DISRUPTIVE) • Student responds to the teachers OTR Individual with a question

Appendix B

Kentucky Core Academic Standards

Reading: Literature

Key Ideas and Details:	CCSS.ELA-LITERACY.RL.1.1	Ask and answer questions about key details in a text.
	CCSS.ELA-LITERACY.RL.1.2	Retell stories, including key details, and demonstrate understanding of their central message or lesson.
	CCSS.ELA-LITERACY.RL.1.3	Describe characters, settings, and major events in a story, using key details.
Craft and Structure:	CCSS.ELA-LITERACY.RL.1.4	Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.
	CCSS.ELA-LITERACY.RL.1.5	Explain major differences between books that tell stories and books that give information, drawing on a wide reading of a range of text types.
	CCSS.ELA-LITERACY.RL.1.6	Identify who is telling the story at various points in a text.
Integration of Knowledge and Ideas:	CCSS.ELA-LITERACY.RL.1.7	Use illustrations and details in a story to describe its characters, setting, or events.
	CCSS.ELA-LITERACY.RL.1.8	(RL.1.8 not applicable to literature)
	CCSS.ELA-LITERACY.RL.1.9	Compare and contrast the adventures and experiences of characters in stories.
Range of Reading and Level of Text Complexity:	CCSS.ELA-LITERACY.RL.1.10	With prompting and support, read prose and poetry of appropriate complexity for grade 1.

Reading: Informational Text

Key Ideas and Details:	CCSS.ELA-LITERACY.RI.1.1	Ask and answer questions about key details in a text.
	CCSS.ELA-LITERACY.RI.1.2	Identify the main topic and retell key details of a text.

	CCSS.ELA-LITERACY.RI.1.3	Describe the connection between two individuals, events, ideas, or pieces of information in a text.
Craft and Structure:	CCSS.ELA-LITERACY.RI.1.4	Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
	CCSS.ELA-LITERACY.RI.1.5	Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.
	CCSS.ELA-LITERACY.RI.1.6	Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.
Integration of Knowledge and Ideas:	CCSS.ELA-LITERACY.RI.1.7	Use the illustrations and details in a text to describe its key ideas.
	CCSS.ELA-LITERACY.RI.1.8	Identify the reasons an author gives to support points in a text.
	CCSS.ELA-LITERACY.RI.1.9	Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).
Range of Reading and Level of Text Complexity:	CCSS.ELA-LITERACY.RI.1.10	With prompting and support, read informational texts appropriately complex for grade 1.

Reading: Foundational Skills

Print Concepts:	CCSS.ELA-LITERACY.RF.1.1	Demonstrate understanding of the organization and basic features of print.
	CCSS.ELA-LITERACY.RF.1.1.A	Recognize the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation).
Phonological Awareness:	CCSS.ELA-LITERACY.RF.1.2	Demonstrate understanding of spoken words, syllables,

		and sounds (phonemes).
	CCSS.ELA-LITERACY.RF.1.2.A	Distinguish long from short vowel sounds in spoken single-syllable words.
	CCSS.ELA-LITERACY.RF.1.2.B	Orally produce single-syllable words by blending sounds (phonemes), including consonant blends.
	CCSS.ELA-LITERACY.RF.1.2.C	Isolate and pronounce initial, medial vowel, and final sounds (phonemes) in spoken single-syllable words.
	CCSS.ELA-LITERACY.RF.1.2.D	Segment spoken single-syllable words into their complete sequence of individual sounds (phonemes).
Phonics and Word Recognition:	CCSS.ELA-LITERACY.RF.1.3	Know and apply grade-level phonics and word analysis skills in decoding words.
	CCSS.ELA-LITERACY.RF.1.3.A	Know the spelling-sound correspondences for common consonant digraphs.
	CCSS.ELA-LITERACY.RF.1.3.B	Decode regularly spelled one-syllable words.
	CCSS.ELA-LITERACY.RF.1.3.C	Know final -e and common vowel team conventions for representing long vowel sounds.
	CCSS.ELA-LITERACY.RF.1.3.D	Use knowledge that every syllable must have a vowel sound to determine the number of syllables in a printed word.
	CCSS.ELA-LITERACY.RF.1.3.E	Decode two-syllable words following basic patterns by breaking the words into syllables.
	CCSS.ELA-LITERACY.RF.1.3.F	Read words with inflectional endings.
	CCSS.ELA-LITERACY.RF.1.3.G	Recognize and read grade-appropriate irregularly spelled words.
Fluency:	CCSS.ELA-	Read with sufficient

	LITERACY.RF.1.4	accuracy and fluency to support comprehension.
	CCSS.ELA-LITERACY.RF.1.4.A	Read grade-level text with purpose and understanding.
	CCSS.ELA-LITERACY.RF.1.4.B	Read grade-level text orally with accuracy, appropriate rate, and expression on successive readings.
	CCSS.ELA-LITERACY.RF.1.4.C	Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

Appendix C

Fidelity of Implementation Checklist

General Reading Instruction Fidelity Checklist

Teacher will:

__ Review classroom expectations with a student leader

__ Everyone at their spots on the rug/desks

__ Review broad idea of lesson of the day

__ Prepare for book reading using the following:

- Identify picture clues of the cover (e.g., "what do you think this book will be about?")

- Review learning target (e.g., "Begin with the end in mind")

- remind what that looks like (e.g., "that's your job today while I'm reading, give me a thumbs up if you think you can do that?, "I can understand the role of characters in a story")

-Make Predictions (e.g., let's make some predictions before we read using the title and the picture clues)

__ Read book

__ identify/Review pieces of the lesson, examples below:

- "Who is our main character? Who is granny? What's her role?"

- middle of the book, student check in with a "give me a thumbs up if you have thought about being all grown up" & "What is she doing here?"

- interact with the story – "what do she need to do first?"

- at the end of the book ask review questions from the story

__ Activity

- turn and talk to a partner
- review/connect to the story
- individual connection/story related activity

Orton-Gillingham Reading Instruction Fidelity Checklist

Step 1. Example Three-Part Drill Lesson Checklist.

Teacher will:

- Present the selected cards, one at a time, in random order.
- Since the concepts are previously taught, when the card is presented visually, the class responds by pronouncing the phoneme (sound) to the grapheme (letter) shown.
- Teacher may prompt with "What sound?"
- If students struggle or pronounce incorrectly, teacher re-inserts the letter card into the pack to re-try.
- If the letter represents more than one sound, instruct students to say both sounds, one after the other by prompting. For example the letters *th*, teacher prompts by saying: "*TH* says ____ and ____". Students respond with hard and soft sounds, such as *th* as in *that* is a hard sound, and *th* as in *thumb* is a soft sound.
- This process is repeated rapidly for the entire deck of previously taught cards until students have produced all of the learned sounds.

Step 2. Example New Phonetic Concept Lesson Checklist.

Teacher will:

- Model "how to" form the capital letter on the outside space of the house paper on the transparency using a green crayon to make a solid capital letter for the class to see.

- Students then create their own capital letter like the teacher modeled on their paper with their green crayon.
- Teacher and students will then place the screen under the paper and trace the solid example letter with the crayon 5 times to create bumps while tracing.
- While tracing teacher and students verbalize the letter sound each time they trace it.
- Teachers and students then remove the screen and trace the bumps three times with their writing-hand pointer finger, verbalizing as they trace.
- Students then trace the dotted letter with the crayon one more time, verbalizing as they trace.
- Students independently create the capitol letter one more time on their paper.
- Have students circle their best capitol letter.
- When ready, students move onto the smaller house on the paper to create the same process as above, with a lower case letter.

Step 3. Example Decoding Lesson checklist.

Teacher will:

- Model how to make the door by taking a strip of paper, and fold the last 1/3 over to create a flap or "door".
- Have students create their own door with a strip of paper the same way.
- For the example, write the letters "g – o" on a post-it note and place it on the 2/3 of paper strip before the door.

- On another post-it note, write the letter “t” and place it on the 1/3 piece of folded over paper, or the door.
- Explain and show when the door is closed, showing the letters “g-o-t” it represents a closed syllable and a short vowel sound.
- Have students say the short vowel sound as in “got”.
- Open the door showing the letters “g-o”. Explain this represents an open syllable and a long vowel sound.
- Have students say the long vowel sound or shouting out the vowels name (“O), as in “go”.
- When example is completed, have students use their strips of paper to create doors (such as the example: go/t) for the chosen words of the day.

Step 4. Example Red Word Lesson Checklist.

Teachers will:

- Hold the word in their non-writing hand.
- Slide the pointer finger of their writing hand under the word while reading it – repeated 3 times.
- Take their same finger and trace the letters while spelling the word, then slide their finger under the word while you reading it again – repeated 3 times with students in unison response.
- Extend their non-writing arm out in front while holding the card in their hand.

- Place their writing hand on their arm and slide it from shoulder to wrist while reading the word – repeated 3 times with students in unison response while modeling on their arm.
- Spell the word, tapping once for each letter down their arm. Then read the word again while sliding their hand from shoulder to wrist – repeated 3 times with students in unison response
- Give each student a white piece of paper or flash card and a red crayon. Instruct them to write the word, saying the letters aloud as they write, and underline the word as they read it – repeated on both sides of the small blank piece of paper.
- Collect all of the supplies and have the student read the word – repeated for each word taught during the lesson

Step 5. Example Comprehension Lesson Checklist.

Teacher will:

- Introduce the book.
- Prior to reading the book, using the paper easel, teacher asks and records what the students predict the story will be about.
- Once they have predicted what the story may be about, using pictures or prior knowledge, read the first page.
- After the first page is read, on a fresh sheet of paper, teacher asks students to generate questions based on what they know so far, and record the questions.
- Repeat this step every page or so, depending on the level of text and students abilities.

- Once the story is read, teacher will ask “Are there any parts that are confusing or unclear about the story?” If so, teacher and students will work together to clarify the reading and analyze to find meaning and understanding of the story.
- Revisit the student created questions, and use the story to answer the questions as part of clarifying for understanding.
- Revisit the student created predictions and compare if they are accurate to what the story said. Discuss what happened and what did not.
- Using a new piece of paper, work together as a class to create a one to two sentence summary of the book.

Appendix D

IRP-15 Pre and Post Survey

Intervention Rating Profile (IRP-15)
Original Version

The purpose of this questionnaire is to obtain the information that will aide in the selection of classroom interventions. Please circle the number which best describes your agreement with each statement.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. This would be an acceptable intervention for the child's problem behavior.	1	2	3	4	5	6
2. Most teachers would find this intervention appropriate for behavior problems in addition to the one described.	1	2	3	4	5	6
3. This intervention should prove effective in changing the child's problem behavior.	1	2	3	4	5	6
4. I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
5. The child's behavior problem is severe enough to warrant use of this intervention.	1	2	3	4	5	6
6. Most teachers would find this intervention suitable for the behavior problem described.	1	2	3	4	5	6
7. I would be willing to use this intervention in the classroom setting.	1	2	3	4	5	6
8. This intervention would not result in negative side-effects for the child.	1	2	3	4	5	6
9. This intervention would be appropriate for	1	2	3	4	5	6

a variety of children.						
10. This intervention is consistent with those I have used in the classroom.	1	2	3	4	5	6
11. The intervention was a fair way to handle the child's problem described.	1	2	3	4	5	6
12. This intervention is reasonable for the behavior problem described.	1	2	3	4	5	6
13. I like the procedures used in this intervention.	1	2	3	4	5	6
14. This intervention should be a good way to handle the child's problem behavior.	1	2	3	4	5	6
15. Overall, this intervention would be beneficial for the child.	1	2	3	4	5	6

Original IRP-15 taken from Martens, B. K., Witt, J. C., Elliott, S. N., & Darveaux, D. X. (1985). Teacher judgments concerning the acceptability of school-based interventions. Professional Psychology: Research and Practice, 16, 191-198.

Pre- Intervention Rating Profile (IRP-15)
Modified Version

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. This is an acceptable intervention for the child's problem behavior and academic needs.	1	2	3	4	5	6
2. Most teachers would find this intervention appropriate for students' academic and behavioral needs.	1	2	3	4	5	6
3. This intervention should be effective in changing the child's achievement and behavior.	1	2	3	4	5	6
4. I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
5. The child's behavioral and academic needs are severe enough to warrant use of this intervention.	1	2	3	4	5	6
6. Most teachers would find this intervention suitable for the academic needs and behavior problem described.	1	2	3	4	5	6
7. I would be willing to use this intervention in the classroom setting.	1	2	3	4	5	6
8. This intervention should not result in negative side effects for the child.	1	2	3	4	5	6
9. This intervention is appropriate for a variety of children.	1	2	3	4	5	6
10. This intervention is	1	2	3	4	5	6

consistent with those I have used in the classroom.						
11. The intervention is a fair way to handle the child's academic needs and problem behavior.	1	2	3	4	5	6
12. This intervention is reasonable for the student's academic needs and behavior problems.	1	2	3	4	5	6
13. I like the procedures used in this intervention.	1	2	3	4	5	6
14. This intervention should be a good way to handle the child's behavior and academic needs.	1	2	3	4	5	6
15. Overall, this intervention should be beneficial for the child.	1	2	3	4	5	6

Post-Intervention Rating Profile (IRP-15)
Modified Version

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. This was an acceptable intervention for the child's problem behavior and academic needs.	1	2	3	4	5	6
2. Most teachers would find this intervention appropriate for students' academic and behavioral needs.	1	2	3	4	5	6
3. This intervention was effective in changing the child's achievement and behavior.	1	2	3	4	5	6
4. I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
5. The child's behavioral and academic needs were severe enough to warrant use of this intervention.	1	2	3	4	5	6
6. Most teachers would find this intervention suitable for the academic needs and behavior problem described.	1	2	3	4	5	6
7. I would be willing to use this intervention in the classroom setting.	1	2	3	4	5	6
8. This intervention did not result in negative side effects for the child.	1	2	3	4	5	6
9. This intervention is appropriate for a variety of children.	1	2	3	4	5	6
10. This intervention is consistent with those I have used in the classroom.	1	2	3	4	5	6
11. The intervention was a fair way to handle the child's academic needs	1	2	3	4	5	6

and problem behavior.						
12. This intervention was reasonable for the student's academic needs and behavior problems.	1	2	3	4	5	6
13. I like the procedures used in this intervention.	1	2	3	4	5	6
14. This intervention was a good way to handle the child's behavior and academic needs.	1	2	3	4	5	6
15. Overall, this intervention was beneficial for the child.	1	2	3	4	5	6

CURRICULUM VITAE

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PROFILE

A doctoral graduate from the University of Louisville in Curriculum and Instruction, Special Education. Research interests include multi-tiered systems of support, specifically tier 2 academic and behavioral interventions for students with and at-risk for emotional and behavioral disorders, academic interventions for students with learning disabilities and transition services and programs.

EDUCATION

2013 – present Enrolled in the Ph.D. program, Curriculum and Instruction
University of Louisville
Areas of Interest: special education instructional strategies for students with
challenging behaviors; instructional strategies for students with learning difficulties; teacher behaviors effecting student achievement and transition services

2010 M.A. in Education: Special Education
University of Connecticut
K-12 Special Education Endorsement
Research Focus: Positive Behavior Intervention Supports (PBIS Certification)

2009 B.S. in Education: Special Education, Concentration in Mathematics
University of Connecticut
Teacher Certification: Special Education Comprehensive K-12
Fulfilled requirements for an interdisciplinary concentration in Mathematics

PROFESSIONAL HONORS AND AWARDS

Dr. M. Celeste Nichols Professional Development Award, November 2015, University of Louisville Women's Center, Louisville, KY.

Comprehensive Examinations, Passed with Honors, April 2015, University of Louisville, Louisville, KY.

Association for Positive Behavior Supports (APBS), Conference Invited Speaker, March 2015, Boston, MA.

Higher Education Consortium on Special Education (HECSE), Selected Doctoral Scholar, Short Course participant, January 2015, Washington, DC.

Tuition Match Award Recipient, August 2014 – May 2015, School of Interdisciplinary and Graduate Studies, University of Louisville, Louisville, KY.

Presentation Travel Funding Award Recipient, Fall 2014, School of Interdisciplinary and Graduate Studies, University of Louisville, Louisville, KY.

Association for Positive Behavior Supports (APBS) Conference, Edward G. "Ted" Carr Poster award recipient, March 2014, Chicago, IL

Office of Special Education Programs Leadership Grant, 2013-present, University of Louisville, Louisville, KY.

TEACHING CERTIFICATION

Connecticut State Department of Education Provisional Educator Certificate: *Comprehensive Special Education, Grades K-12 (165), valid through 2020*

PROFESSIONAL EXPEREINCE

Teaching Experience

Spring 2016 Guest Lecture, *Assessment in the Classroom,* Special Populations in Schools, EDSP 345

Spring 2016 Online Instructor, Behavioral Interventions, SEG630, Asbury University

Spring 2016 Online Instructor, Methods and Assessment II, SEG672, Asbury University

Fall 2014 Instructor, Introduction to Exceptionalities, EDSP 240
Course evaluation above college mean

Fall 2014 Co-Instructor, Advanced Applied Behavior Analysis, EDSP 650
Course evaluation above college mean

Fall 2013 Co-Instructor, Special Populations in Schools, EDSP 345
Course evaluation above college mean

Spring & Fall 2014 Guest Lecture, *Assessment Strategies & Response to Intervention,* Special Populations in Schools, EDSP 345

2010 – 2013 High School in the Community, Academy for Law & Social Justice, New Haven, Connecticut

Special Educator: Ninth through Twelfth Grade Resource Teacher & Lead Teacher

Summer 2011 New Haven Public Schools, New Haven, Connecticut
Summer School Special Educator Grades Nine through Twelve

2009 – 2010 Windham Middle School, Windham, Connecticut
Internship – Positive Behavior Intervention and Supports, Grades 7 - 8 (*project objective: creation and implementation of Tier 2 and Tier 3 supports*)

2009 – 2010 Graduate Assistant Office of the Dean, Storrs, Connecticut
Graduate Assistant

Research Experience

2013 – present	Team Member, Teacher Coaching and Student Outcomes Project, Leadership Grant, Louisville, KY.
2013 – present	Team Member, Academic and Behavioral Response to Intervention (Project ABRI), Louisville, KY.
Summer 2014	Researcher, Residential Facility, Tier 2 Interventions, Atlanta, GA.
2012 – 2013	Teacher researcher, Antecedent-Based Behavioral Interventions, New Haven, CT
2009 – 2010	Early Reading Intervention (Project - ERI) data collector, University of Connecticut, Storrs, CT

PUBLICATIONS

Refereed Peer Reviewed Articles

Swoszowski, N. C., **Evanovich, L. L.**, & Ennis, R. P. (Under Review). Evaluating Implementation of Check-In/Check-Out in Alternative Educational Settings: Stakeholder Perspectives. *Education and Treatment of Children*.

Evanovich, L. L., Swoszowski, N. C., Ennis, R. P., & Kimball, K. A. (Under Review). Implementing check-in/check-out within a truncated summer school schedule. *Behavior Disorders Brief*.

Evanovich, L. L., & Scott, T. (in press). PBIS implementation: An administrator's guide to presenting the logic and steps to faculty and staff. *Beyond Behavior*.

Gage, N., MacSuga-Gage, A. S., & **Evanovich, L. L.** (2015). Training teachers to use antecedent-based classroom management strategies to support inclusion of students with intellectual disabilities: A feasibility study. *Journal of Global Research in Education and*

Social Science.

Harbour, K., **Evanovich, L.,** Sweigart, C., & Hughes, L. (2015). A brief review of effective teaching practices that maximize student engagement. *Preventing School Failure*.

Evanovich, L. L., *& Cooper, J. T. (in preparation). Bridging the transition disconnect to postsecondary settings for students with learning disabilities. Journal of Postsecondary Education*.

Invited Chapters

Jolivette, K., MacSuga-Gage, A., & **Evanovich, L**. (in press). Students with emotional and behavioral disorders. Y. Bui & E. Meyen (Eds.), *Exceptional children in today's schools: What teachers need to know* (4th ed.). Love Publishing Company.

Sweigart, C. A., & **Evanovich, L. L.** (2015). Transition assessment for students with learning and behavioral disabilities, best practices and future directions. B. G. Cook, M. Tankersley, & T. J. Landrum (Ed.), *Transition of Youth and Young Adults (Advances in Learning and Behavioral Disabilities, Volume 28)*. Emerald Group Publishing Limited, pp.89 – 112.

PROFESSIONAL PRESENTATIONS

National Conference Presentations

Invited Refereed

Landrum, T. J., Sweigart, C., & **Evanovich, L. L.** (April, 2016). Identifying and Disseminating Evidence-Based Practice in Special Education. *Council for Exceptional Children Convention & Expo*. St. Louis, MO.

Evanovich, L. L., Botts, M. K., & Taylor, C. (October, 2015). Tier II practices for juvenile corrections and alternative settings: Ideas for implementation. *2015 National PBIS Leadership Forum*. Chicago, IL.

Evanovich, L. L. (March, 2015). Effective Instruction and Classroom Management as Tier I Interventions: Evidence-Based Practices. *12th International Conference on Positive Behavior Supports*. Boston, MA.

Refereed

Hirsch, S. E., MacSuga-Gage, A. S, & **Evanovich, L. L.** (March, 2016). The ABC's of Implementing Class-wide Positive Behavior Supports: Promoting Teachers' Strategy Use. *13th International Conference on Positive Behavior Supports*. San Francisco, CA.

Evanovich, L. L. (October, 2015). The Effects of implementing a Direct-Instruction Reading Intervention for elementary students with or at-risk for E/BD. *39th Annual Conference of Teacher Educators for Children with Behavior Disorders*. Tempe, AZ.

Evanovich, L. L., Collins, L., & Sweigart, C. (October, 2015). The Use of Performance Feedback to Increase Teacher Praise: An Evidence-Based Practice? *39th Annual Conference of Teacher Educators for Children with Behavior Disorders*. Tempe, AZ.

Swoszowski, N, & **Evanovich, L. L.** (October, 2015). Assessing the Utility of Check-in/Check-out in Alternative Educational Settings. *39th Annual Conference of Teacher Educators for Children with Behavior Disorders*. Tempe, AZ.

MacSuga-Gage, A. S., Hirsch, S. E., & **Evanovich, L. L.** (October, 2015). A Step-by-Step Process to Help Teachers Implement Evidence-Based Classroom Management. Strategies. *39th Annual Conference of Teacher Educators for Children with Behavior Disorders*. Tempe, AZ.

Evanovich, L. L., Swoszowski, N., & Kimball, K. (September, 2015). Implementing Check-in/Check-out within a Truncated Summer School Schedule. *Council for Children with Behavior Disorders*. Atlanta, GA.

Sweigart, C., & **Evanovich, L. L.** (September, 2015). Transition Assessment for Students with Learning and Behavior Disorders: Best Practices and Future Directions. *Council for Children with Behavior Disorders*. Atlanta, GA.

Evanovich, L. L., Ennis, R. P., & Jolivette, K. (February, 2015). Function-based Choice Making: A Classroom-based Intervention to Improve the Behavior of Students with E/BD. *Midwest Symposium for Leadership in Behavior Disorders*. Kansas City, MO.

Scott, T., & **Evanovich, L. L.** (November, 2014). Classroom Management, Effective Instruction, and Defusing Escalating Behavior. *Kentucky Council for Exceptional Children*. Louisville, KY.

Evanovich, L., & Sweigart, C. (November, 2014). Live Support: Facilitating Effective Practice in the Classroom with Coaching and Performance Feedback. *Teacher Education Division of the Council for Exceptional Children*. Indianapolis, IN.

Sweigart, C. **Evanovich, L. L.** (October, 2014). Promoting Effective Teacher Practice Through Live Support in the Classroom. *38th Annual Conference of Teacher Educators for Children with Behavior Disorders*. Tempe, AZ.

Evanovich, L. L., Swoszowski, N., Ennis, R. P., Kimball, K. (October, 2014). Implementing Check-in/Check-out within a Truncated Schedule: A Feasibility Study. *38th Annual Conference of Teacher Educators for Children with Behavior Disorders*. Tempe, AZ.

Sweigart, C., Hughes, L., **Evanovich, L. L.**, & Barnes, N. (October, 2013). Prompting Increased Rates of Effective Instructional Practice: Teacher and Student Outcomes. *37th Annual Conference of Teacher Educators for Children with Behavior Disorders*. Tempe, AZ.

MacSuga-Gage, A. S., Gage, N.A., **Evanovich, L. L.** (October, 2013). Applying Targeted Antecedent-Based Interventions to Support Student Outcome in Classrooms Serving Students with EBD. *37th Annual Conference of Teacher Educators for Children with Behavior Disorders*. Tempe, AZ.

Refereed Poster Presentations

Swoszowski, N. C., **Evanovich, L. L.,** Ennis, R. P., & Jolivette, K. (April, 2016). Educators' Perceptions of the Utility of Check-In/Check-Out in Alternative Settings. *Council for Exceptional Children Convention & Expo*. St. Louis, MO.

Evanovich, L. L., & Knackstedt, K. (April, 2016). Policy and Politics in Education: Closing the Gap. *Council for Exceptional Children Convention & Expo*. St. Louis, MO.

Hirsch, S. E., MacSuga-Gage, A. S., & **Evanovich, L. L.** (April, 2016). From Research to Practice: A Systematic Process to Support Implementation of Evidence-Based Classroom Management Strategies. *Council for Exceptional Children Convention & Expo*. St. Louis, MO.

Evanovich, L. L. (February, 2016). Effects of Increasing Positive Feedback and Opportunities to Respond for Students with Challenging Behaviors During Reading Instruction. *Midwest Symposium for Leadership in Behavior Disorders*. Kansas City, MO.

Evanovich, L. L., Swoszowski, N. C., & Ennis, R. P. (February, 2016). Implementing Check-In/Check-Out in a Truncated Schedule. *Midwest Symposium for Leadership in Behavior Disorders*. Kansas City, MO.

Kimball, K, **Evanovich, L.,** Boden, L., & Jolivette, K. (October, 2015). Increasing Family
Engagement of Youth in Secure Care through PBIS. *2015 National PBIS Leadership Forum*. Chicago, IL.

Parks Ennis, R., **Evanovich, L.,** & Kimball, K. (October, 2015). Supporting Students with E/BD
in the Classroom with the Use of Tier 2 Interventions. *2015 National PBIS Leadership*
Forum. Chicago, IL.

Collins, L., **Evanovich, L. L.**, & Sweigart, C. (September, 2015). The Use of Performance
Feedback to Increase Teacher Praise: An Evidence-Based Practice? *Council for Children with Behavior Disorders*. Atlanta, GA.

Evanovich, L. L., & Lingo, A. S. (April, 2015). Increasing Opportunities to Respond to Students with Challenging Behaviors During Reading Instruction. *Council for Exceptional Children Convention & Expo*. San Diego, CA.

Swoszowski, N., **Evanovich, L.**, & Jolivette, K. (April, 2015). Evaluating the Effect of Adapted
Check-In/Check-Out. *Council for Exceptional Children Convention & Expo*. San Diego, CA.

Boden, L. J., Jolivette, K., & **Evanovich, L. L.** (October, 2014). Check-in Check-out for Students with Moderate Intellectual Disability. *2014 National PBIS Forum*. Chicago,
IL.

Evanovich, L. L., Sweigart, C., Hughes, L. E. (March, 2014). Effectiveness of Prompting
Evidence-Based Instructional Practice. *11th International Conference on Positive Behavior Supports*. Chicago, IL.
**APBS Edward G. "Ted" Carr Poster Award*

Gage, N. A., **Evanovich, L. L.,** Sugai, G. (March, 2013). Antecedent-Based Behavioral Interventions in High School: Structural Analysis at the Secondary Level. *Council for Exceptional Children Convention & Expo*. San Antonio, TX.

Local Presentations

<u>Non-Referred Presentations</u>
Evanovich, L. (February and April, 2015). *Classroom Management and Behaviors*, University of Louisville, International Service Learning Program, Louisville, KY.

Cooper, J. & **Evanovich, L.** (February, 2015). *Managing Challenging Behaviors*, Shepherdsville Elementary School, Shepherdsville, KY.

Evanovich, L., (November, 2014). *PBIS Tier 1 & Classroom Management*, Shacklette Elementary School, Louisville, KY.

Doctoral Student and Mentor Panel Discussion. (August, 2014). *University of Louisville Curriculum and Instruction Doctoral Student Orientation*, Louisville, KY.

Jolivette, K., & **Evanovich, L.** (July, 2014). *Facility Wide Positive Behavior Interventions and Supports Facilitator Workshop,* Department of Juvenile Justice, Atlanta, GA.

Scott, T., & **Evanovich, L.** (June, 2014). *School-Wide Tier 1 Behavior Training Workshop, Project ABRI*. Louisville, KY.

SERVICE

2015 – present University of Louisville
Faculty Advisor
Best Buddies Student Organization, University of Louisville Chapter

2015 – present University of Louisville
Treasurer
Behavior Analysis Student Association of Louisville (BASAL)

2104 – 2105 University of Louisville
President
College of Education and Human Development – Graduate Student Association

2013 – present University of Louisville
Executive Board Member
College for Education and Human Development - Graduate Student Association

2013 – 2015 Kentucky Department of Education
Team member creating state wide professional development video modules for restraint and seclusion

National Service

2015 - present Research to Practice Strand Leader, Annual Conference of Teacher Educators for Children with Behavior Disorders

2015 - present Juvenile Justice Strand Leader, PBIS Forum

2015 - present Conference Proposal Reviewer, American Council on Rural Special Education

2015 Guest Reviewer, Residential Treatment for Children and Youth

2015 Guest Reviewer, Remedial and Special Education

2014 Guest Reviewer, SAGE Open

2014 Guest Reviewer, Behavior Disorders

2014 – present	Elected Student Representative, Council for Exceptional Children Representative Assembly
2014 – present	Conference Proposal Reviewer, Council of Exceptional Children
2014 – present	Conference Proposal Reviewer, Association for Positive Behavior Supports
2013 – present	Student Network Representative, Association for Positive Behavior Support Membership Committee
2103 – present	Student Workgroup Member, Association for Positive Behavior Support Membership Committee
2013 – present	Conference Proposal Reviewer, Council for Children with Behavioral Disorders
2013 – 2014	Guest Reviewer, Education and Treatment of Children

Service to Schools

University of Louisville (2013 – present)
- Grant Writing Symposium Event and Follow-up Workshops

Atlanta (GA) Public Schools (2014)
- Hillside Residential Facility – Behavioral Consultant

Bullitt County Public Schools (2015 – present)
- Shepherdsville Elementary School – Managing Behaviors Professional Development

Shelby County (KY) Public Schools (2013 - present)
- Clear Creek Elementary – Teacher Training and Behavioral Consultation

Jefferson County (KY) Public Schools (2013 - present)
- Carter Traditional School – Classroom Management Consultant
- Portland Elementary School – Behavioral & Academic Consultant
- Myers Middle School – Behavioral Consultant

- Shacklette Elementary School – PBIS Tier 1 & Classroom Management Professional Development

New Haven (CT) Public Schools (2010 – 2013)

- New Haven Public Schools, District Wide Special Education Professional Development
    - Response to Intervention
    - School-Wide Positive Behavior Intervention and Supports
    - DIBELS and REWARDS Reading Interventions

PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS

Higher Education Consortium on Special Education (HECSE)
2015 – Present

Council for Exceptional Children (CEC)
2013 - Present
Student Representative to the Representative Assembly (RA) 2015 - 2017
Council for Children with Behavioral Disorders (CCBD)
Division for Research (DR)
Division for Career Development and Transition (DCDT)

Association for Positive Behavior Support (ABPS)
2013 - Present
Student Workgroup
Membership Committee

Orton-Gillingham Reading Intervention Trained, November 2014, Columbus, Ohio.

League of Innovative Schools, New England (LIS)
2010 – 2013 New Haven Public Schools

Educators for Progress Innovation and Collaboration (EPIC)
2010 – 2013 New Haven Public Schools