The Effects of Literacy Coaching on Teacher Instructional Behaviors and Fidelity to Tier 1 Reading Instruction

Kaitlin Leonard
University of Connecticut - Storrs, kaitlin.leonard@uconn.edu

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The Effects of Literacy Coaching on Teacher Instructional Behaviors and Fidelity to Tier 1 Reading Instruction

Presented by

Kaitlin Leonard, Ph.D.

University of Connecticut, 2020

Abstract

Quality instruction and teacher effectiveness matter, but there is limited research to inform how to best support teachers in their efforts to boost student reading outcomes (Clark et al., 2016). Existing research suggests that literacy coaching can be effective if it is (a) content specific (e.g., coaching on a specific program) and (b) focused on improving specific skills with deliberate practice (e.g., coaching to increase target instructional behaviors) (Kraft, Hogan, & Blazar, 2018). The current study evaluated the efficacy of a coaching intervention with two second grade teachers designed to increase their use of target instructional behaviors (i.e., modeling, opportunities to respond, and specific feedback) during 30-minute Tier 1 reading instruction using Fundations, an evidence-based program. A single-case, multiple-baseline design across behaviors was used to evaluate the rate of occurrences of each behavior during 30-minute whole-class Fundations lessons. Visual analysis and an examination of effect sizes indicated a total of four out of eight possible effects across the two participants. Findings suggest that coaching was effective specifically for instructional behaviors for which teachers demonstrated low rates of implementation during baseline.

Keywords: coaching intervention, fidelity, Tier 1 reading instruction, instructional behaviors
The Effects of Literacy Coaching on Teacher Instructional Behaviors and Fidelity to Tier 1 Reading Instruction

Kaitlin Leonard

BA, Providence College, 2000

M.Ed., Fitchburg State University, 2005

A Dissertation
Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy At the University of Connecticut

2020
The Effects of Literacy Coaching on Teacher Instructional Behaviors and Fidelity to Tier 1 Reading Instruction

Presented by
Kaitlin Leonard, B.A., M.Ed.

Major Advisor
________________________________________
Michael D. Coyne

Associate Advisor
________________________________________
Brandi Simonsen

Associate Advisor
________________________________________
Sarah L. Woulfin

University of Connecticut
2020
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Chapter 1

Introduction

Learning to read well is essential for success in school and later in life (Snow, 2002). Early reading success is predictive of positive academic outcomes, and children who struggle in reading may encounter long-term negative effects (McMaster et al., 2014; Snow, 2002). In 2019, The National Assessment of Educational Progress (NAEP) reported that only 35% of fourth graders were at or above the proficient level in reading indicating that a substantial number of students in the United States are reading below grade level and therefore at risk for future academic difficulties (RIF, 2019).

Background of the Problem

The need to teach reading well is urgent and it is critical that teachers can address the needs of all learners. However, teaching reading is complex and teachers need support to provide effective reading instruction in the classroom. Snow and colleagues (2002) define excellent teaching as teachers who are “well-prepared, highly knowledgeable, and receiving ongoing support,” (p. 6). In 2000, the National Reading Panel identified five big ideas in beginning reading: (a) phonemic awareness; (b) phonics; (c) fluency; (d) vocabulary; and (e) comprehension. The Panel’s report provided teachers and schools with critical information about important content to teach in beginning reading. However, it is not just what teachers teach, it is also how they teach that can make a significant impact on student reading progress. Research suggests that there are features of effective instruction that can be incorporated into classroom practice that can accelerate learning, such as modeling, scaffolding, corrective feedback, and opportunities to respond (Baker et al., 2010; Coyne et al., 2011; Cuticelli, et al.,
The Panel also supported recommendations made by the Committee on the Prevention of Reading Difficulties in Young Children (Snow et al., 1998), which indicated that explicit instructional strategies can enhance literacy outcomes for all students, and can prevent future reading difficulties (Snow et al., 1998). In addition, in the IES Practice Guide (Gersten et al., 2009) evidence suggests the use of systematic, explicit instruction prevents future reading difficulties. Explicit instruction involves modeling, and more student-teacher interaction such as frequent practice opportunities by involving more group responses and opportunities for specific feedback. Thus, improving the overall quality of instruction can impact student reading outcomes (Cuticelli, Collier-Meek, & Coyne, 2015).

The delivery of reading instruction matters, but there is limited research on how to best support teachers improve the quality of their instruction (Clark et al., 2016). According to Every Students Succeeds Act (ESSA) in 2015, the law requires schools to implement evidence-based interventions. However, even when teachers are able to identify evidence-based reading interventions, it is challenging for them to implement these practices with fidelity (Brock & Carter, 2017). Therefore, teachers require support to ensure they are implementing interventions and evidence-based practices with fidelity.

Improving teachers’ use of evidence-based practices, and their fidelity of implementation of those practices, is associated with increased student outcomes (Kretlow & Bartholomew, 2010). In contrast, research has demonstrated that when teachers implement reading practices inconsistently, students experience lower academic outcomes (e.g., Furtak at al., 2008). In order to increase teachers’ use of evidence-based reading practices, studies have suggested that teachers need considerable, ongoing support (e.g., DiGennaro et al., 2007).
Professional development is essential for supporting teachers and coaching is a critical component of effective professional development. Kraft and colleagues (2018) found that providing teachers with coaching and professional development to support the implementation of specific curriculum materials was associated with greater gains in teacher instructional behaviors. For example, Landry et al. (2011), scaled up a randomized control trial that used the control group from a previous study (now year one teachers) and compared year two teachers on the improvement of literacy and language skills for pre-kindergarten students. In this study, a research-based program was added as part of the conceptual framework to support the importance of the combination of training and resources. Teachers received (a) online professional development with teacher meetings; (b) classroom mentoring; (c) a research-based curriculum; and (d) progress monitoring to assist in making instructional decisions. Results indicated significant differences in vocabulary, complex language, and print knowledge for those students who had teachers that were in year two of the program.

Based on a review of the current literature on literacy coaching (Leonard et al., in preparation), however, few studies have evaluated the effects of coaching on the fidelity and quality of implementation of specific whole-class Tier 1 reading interventions or programs, and the existing studies report mixed findings. Because much of classroom instruction is informed by curriculum and program materials, and because of the promise of curriculum specific coaching, more research is needed on how to best support teachers implement specific reading programs and interventions with fidelity.

**Purpose of the Study and Research Question**
This study begins to address gaps in the literature by investigating the effectiveness of a specific coaching model on increasing teachers’ use of targeted instructional behaviors during implementation of an evidence-based reading program. This study supports and extends the research that suggests coaching teachers on a specific program can increase teachers’ use of instructional behaviors during Tier 1 reading instruction.

The purpose of this study was to determine the effectiveness of a specific coaching intervention on increasing teachers’ use of targeted instructional behaviors during implementation of an evidence-based reading program. More specifically, this study was conducted to answer the following research question: Does coaching increase teachers’ use of modeling, opportunities to respond, and specific feedback above and beyond one stand-alone training?

**Research Design**

This study used a multiple baseline design across behaviors. The study took place in a public elementary school in the Northeastern section of the United States. Two general education second grade teachers participated in the study. In order to participate in the study, teachers had to be (a) implementing Tier 1 or whole group Fundations for 30 minutes per day; (b) agree to be observed daily for the duration of the study (i.e., approximately eight weeks); (c) agree to meet with the coach (i.e., primary investigator) for a post observation conference during the coaching intervention and during school hours; and (c) agree to be videotaped during the post observation conferences.

The dependent variable for the study was direct observations of target instructional behaviors. Data collectors were trained to use a modified version of the Classroom Observation
of Student-Teacher Interactions (COSTI) to document the rate of occurrences of teacher models, opportunities to respond (both group and individual), and academic feedback in the 30-minute whole group Fundations lesson. Observations were conducted across all time intervals (i.e., baseline, training, and coaching intervention).

The independent variable was the coaching intervention. One to two times per week, the coach observed teachers, collected data on fidelity of Fundations and the frequency of the target instructional behavior using the COSTI observation protocol, and met with the teachers for a post observation feedback session. During each phase, the coach supported teachers to incorporate one instructional behavior at a time in a staggered schedule format, while continuing to support teachers on the previous behavior(s).

**Dissertation Organization**

The dissertation is organized into five chapters. Chapter two provides a comprehensive review of the relevant literature. Studies in this review evaluated whether professional development and coaching resulted in changes in teacher behavior. The findings of the literature review along with existing research on coaching, assisted in the development of a literacy coaching intervention that was evaluated in the proposed study. Chapter three provides a detailed description of the methods used in the single case design study. Participants, research designs, dependent variable, and independent variable are described. Chapter four presents results of visual analysis, descriptive statistics, and Tau-U and Logs Response Ratio (LRR) effect sizes used to answer the research question. Finally, Chapter five summarizes and interprets the findings, connects the results to the existing literature, suggests implications for practice, and discusses limitations and directions for future research.
Chapter 2
Literature Review

There is strong evidence that professional development can increase the quality of instruction if specific conditions are present (e.g., Yoon et al., 2007). Research also suggests that stand-alone PD or one-shot workshops are not sufficient to impact student achievement (Yoon et al., 2007). Research syntheses suggest that professional development that includes teacher coaching can result in changes in teacher behavior (e.g., Kraft et al., 2018), as well as increases in implementation fidelity (e.g., Brock & Carter, 2017).

Chapter 2 will provide descriptions of the pertinent literature on coaching. First, general research on professional development and coaching will be presented. Then, research on professional development and coaching for reading will be provided. The chapter will close with conclusions and limitations on the literature and future direction of research.

Professional Development

Professional development is a critical component in improving instruction (Yoon et al., 2007). However, it is necessary to think critically about how professional development can be beneficial to teachers. Traditional professional development has been presented as a “patchwork of opportunities” that is not systematic and is delivered in stand-alone workshops (Wilson & Berne, 1999, p.174). For example, research suggests that traditional professional development does not reliably improve the quality of classroom instruction or increase student outcomes (Carpenter et al., 1989; Cohen & Hill, 2001; Garet et al., 2001; Garet at al., 2008; Kennedy, 1998; McCutchen et al., 2002).
However, researchers have identified conditions where professional development may be beneficial (Desimone, 2009; Wayne et al., 2008; Kraft et al., 2018). For example, Yoon et al. (2007) reviewed studies of professional development across content areas that had a positive impact on student achievement. They found that effective professional development was delivered in high dosage (i.e., more than 14 hours), but it also didn’t stand alone; meaning professional development on its own was not sufficient. Yoon and colleagues identified key features of effective professional development across the studies including: (a) workshops; (b) outside experts; (c) ongoing delivery; (d) follow-up support; (e) activities in context; and (f) content. Further, Fixsen et al. (2005) recommend that professional development should be ongoing, increase teacher knowledge, and be embedded with frequent opportunities for teachers to practice what is learned in conjunction with coaching support. In summary, reviews suggest that stand-alone professional development is not sufficient to make lasting changes in teachers’ instructional behaviors or substantially impact student achievement.

Coaching

Coaching has been widely endorsed as a means to enhance professional development and improve the quality of instruction (e.g., Teemant et al., 2011). Although the roles of coaches are often not clearly defined, and responsibilities of coaches vary (Blarney et al., 2009; Duessen et al., 2007), coaching is broadly defined as ongoing teacher observations and feedback in an instructional setting (Joyce & Showers, 1981).

Recently, the National Center for Systemic Improvement (NCSI; Pierce & Buyssee, 2014) outlined key coaching practices that have evidence of effectiveness in improving teacher
practice and learner outcomes. These key coaching practices include: (a) direct observation; (b) modeling; and (c) performance feedback.

Observation is the monitoring of the teacher in a learning setting. In other words, it is the direct observation of a teacher instructing students. It allows the coach to collect data on teacher practice. Modeling refers to the coach demonstrating teaching a skill or lesson with the teacher observing. Frequently, modeling occurs when the teacher is not implementing a skill or lesson correctly. Modeling can take place in the classroom in the natural learning environment with students or outside of the classroom with just the coach and teacher present.

Performance feedback is when the coach presents data collected during a direct observation of teacher practice. Pierce & Buyssee (2014) recommend that performance feedback is most effective when it is: (a) timely; (b) specific; (c) positive; and (d) corrective. Feedback is time sensitive and should be delivered to the teacher as soon as possible after the observation in order to be impactful. Specific feedback is delivering specific data from the observation. For example, “During partner reading, four out of five groups were actively engaged.” Coaches should use positive statement with teachers. For example, “Great job stating small group expectations at the start of the lesson!” Corrective feedback is sometimes necessary to correct a behavior. For example, “I noticed that you started the small group lesson when three out of five of your students were not engaged. What are some pre-corrective strategies that can be implemented to achieve 100% engagement?”

**Research on Coaching**

Kraft et al. (2018) conducted a meta-analysis that examined the impact of teacher coaching on teacher instruction and student outcomes. The researchers identified 60 studies that
evaluated the impact of coaching using an experimental or quasi-experimental design. They reviewed studies that included early childhood to grade 12 in-service teachers in the United States or a developed nation. Kraft et al. (2018), reviewed a total of 60 studies focused on coaching across different content areas and on general instructional pedagogy. The researchers defined coaching as in-service professional development programs that incorporated coaching. Teacher outcomes included scores from classroom observations that evaluated pedagogical practices. Observation instruments included rubrics well-known in the literature as well as instruments developed by researchers or coaching programs. Student outcomes included both low-stakes and high-stakes standardized assessments. An example of a low-stakes assessment was the Dynamic Indicators of Basic Early Literacy Skills and an example of a high-stakes assessment included was the Texas Assessment of Knowledge and Skills. Across studies, the researchers found an average effect of 0.31 on teacher instruction and 0.12 on student achievement when coaching is paired with professional development.

Kraft and colleagues (2018) suggest that the goal of PD is to change teacher behavior to support student learning and that coaching is a central mechanism in affecting teacher behavior change. Based on their findings, they identified four key elements of effective coaching. Coaching should be (a) individualized; (b) sustained over a period of time; (c) context specific (i.e., teacher should be coached based on the program or curriculum they are using in their classroom); and (d) focused on increasing teachers’ specific instructional skills.

Another meta-analytic review conducted by Brock & Carter (2017) examined the effect of professional development, including teacher coaching, on the fidelity of implementation of instruction for students with disabilities in elementary, middle, and high school. They identified 12 studies that were either randomized control trials or quasi-experimental designs across grade
levels and content areas. The researchers defined teacher training as any training or coaching provided to teachers, preservice teachers, or special education teachers that was designed to improve or change instruction. Teacher outcomes included implementation fidelity measures. For example, some studies measured fidelity of implementation by using an implementation fidelity checklist, measuring the frequency and/or duration of behaviors, completing a yes/no checklist, or using a rating scale to measure the quality of implementation. Results from a meta-regression analysis suggest that specific coaching strategies (i.e., modeling and specific feedback) were positively associated with fidelity of implementation with large effect sizes ($g=1.08$). It is also important to note that seven of the eight studies that used the combination of modeling and specific feedback, also presented teacher training in a one-to-one coaching format.

There are limitations, however, that exist in the current literature on professional development and coaching. Many existing reviews focus on professional development and coaching across all content areas and grade levels. The next sections focus on reviewing the literature on professional development and coaching specific to teaching reading.

**Research on Professional Development and Coaching for Reading**

Recently, a meta-analysis explored the effects of professional development on reading achievement for students in kindergarten through eighth grade (Didion et al., 2020). The researchers identified 28 studies that evaluated the impact of professional development using an experimental or quasi-experimental design. They reviewed studies that included mostly general education students with nine studies that included students with reading difficulties and/or special education students. Professional development was defined as “any training provided to in-service teachers” (Didion, 2020, p. 37). Didion et al. (2020), reviewed a total of 28 studies
focused on professional development that was either code-focused (e.g., phonemic awareness, phonics, and fluency) or meaning-focused (e.g., vocabulary or comprehension). Further, the researchers included studies that implemented various formats: (a) whole group; (b) summer course work, (c) professional learning communities (PLC); (d) coaching; and (e) online learning. Student outcomes included both low-stakes and high-stakes standardized assessments. An example of a low-stakes assessment was an informal letter-sound assessment and an example of a high-stakes assessment included was the Stanford 10 Achievement. Across studies, results indicate that PD had an overall positive effect on student reading achievement (Hedges’ $g = .18$). However, in this meta-analysis the effect sizes across studies varied in range from $-0.23$ to $0.57$. Therefore, although the overall effect of professional development in reading was positive, there was wide variability across studies indicating that professional development in reading has inconsistent effects. Although moderator analyses were not statistically significant, the authors recommend that more research is needed on identifying components of effective reading coaching.

In a recent review, Leonard et al. (in preparation) examined (a) the effectiveness of reading coaching on changes in teacher behavior; (b) coaching targeted toward improving reading instruction; and (c) coaching with teachers at the elementary school level. The specific research question that guided this review was: Is reading-focused coaching positively associated with changes in teacher instructional behaviors in elementary school?

The systematic literature review and coding process identified a total of 17 articles that met the inclusion criteria. Studies were included in this review if they used group designs, such as a randomized control trial (RCT) or a quasi-experiment. The review included teacher participants who were professionals in elementary schools, kindergarten through fifth or sixth
grade. Studies in this review included reading coaching as part of the independent variable. Studies in this review provided teachers with ongoing coaching support that was aligned with professional development. Findings were organized by studies that examined the effects of reading coaching on (a) fidelity of implementation of an evidence-based reading program; and (b) changes in specific teacher instructional behaviors measured through general observations of teaching.

**Coaching Focused on Fidelity**

Three studies included coaching focused on supporting teachers implement evidence-based interventions and examined fidelity of implementation. These three studies evaluated teachers’ implementation of supplemental Tier 1 programs: (a) K-PALS (McMaster et al., 2013; Stein et al., 2008), and (b) Enhanced Core Reading Instruction (ECRI; Nelson-Walker et al., 2013). For example, during observations for ECRI, observers measured implementation of the ECRI routines.

Nelson-Walker et al. (2013), detected a statistically significant treatment effect of coaching on fidelity of implementation of ECRI. Teachers in the treatment condition received five 8-hour PD days, three days in the fall and two in the early winter. PD was delivered by an ECRI expert coach and focused on the five big ideas in reading, principles of effective instruction, and delivery of content. ECRI expert coaches delivered additional PD that focused on the delivery of the ECRI intervention during monthly meetings with teachers after observing teachers in their classrooms. A standardized coaching protocol was used for consistency that addressed feedback from the observations and what teachers should focus on during the next month of instruction.
Stein and colleagues (2008) investigated four conditions: (a) “control” that was not implementing K-PALS, (b) “workshop” that participated in an initial ½ day workshop that includes K-PALS training, (c) “booster” that received the initial workshop plus two booster sessions that focused on review of K-PALS procedures and discuss implementation issues, and (d) “helper” that received the workshop, two booster sessions, plus weekly consultation and technical visits by graduate student coaches. It was hypothesized that the helper condition would produce statistically significant treatment effects in fidelity of implementation of PALS in comparison to the other conditions. Although it did in comparison to the control and workshop conditions, there were no differences between the helper and booster conditions. Therefore, in this study the addition of coaching support through weekly consultation sessions did not improve fidelity of implementation.

McMaster and colleagues (2013) used the historical control from Stein et al. (2008) to investigate if two booster session treatment conditions would differ in coach characteristics, internal versus external coaches. Internal coaches included teachers who had implemented K-PALS for at least one year and external coaches were graduate students. The study documented implementation fidelity by using a checklist. There were no statistically significant differences in fidelity of implementation between the conditions that received support from internal or external coaches.

**Coaching Focused on Instructional Behaviors**

Twelve studies examined whether professional development and coaching resulted in increases in specific teacher instructional behaviors measured through general observations of teaching.
**Time Spent on Instruction.** Seven studies observed and documented teachers’ time spent on different aspects of instruction as a dependent variable (Al Otaiba et al., 2016; Al Otaiba et al., 2011; Brownell et al., 2017; Connor et al., 2011; McCutchen et al., 2002; O’Connor et al., 1999; Tong et al., 2017). Brownell and colleagues (2017) coded recommended practices for teaching fluency and word study through a time sampling observational procedure. Connor and colleagues (2011), Al Otaiba and colleagues (2016), and Al Otaiba and colleagues (2011) coded for time spent on code-focused instruction (e.g., phonological awareness, phonics, and spelling) and meaning-focused instruction (e.g., comprehension strategy instruction, vocabulary development). In addition, studies coded for whether the instruction was student-managed (e.g., students work independently or with a peer) or teacher-managed (e.g., teacher is instructing). McCutchen et al. (2002) coded for knowledge affordance (e.g., letter-sound knowledge), literacy activity (e.g., choral reading), textual context (e.g., reading words in isolation), and group context (e.g., small group, whole group). O’Connor (1999) coded for number and duration of phonological and print awareness activities. Tong et al. (2017) observed teachers using a standardized measure in order to identify the percentage of time teachers spent on Cognitive Academic Language Proficiency (CALP).

Five of seven studies that observed and documented teachers’ time spent on different aspects of instruction reported a statistically significant treatment effect for reading coaching on at least one aspect of teaching. For example, McCutchen et al. (2002) reported a statistically significant treatment effect of coaching on time spent on explicit phonological activities. Connor et al. (2011) found that teachers and students in the ISI condition spent significantly more time in teacher-student managed activities, small group individual meaning and code-focused instruction. Al Otaiba et al. (2011) found that teachers in the ISI condition provided statistically
significantly more individualized instruction. However, Al Otaiba et al. (2016) found no statistically significant differences of proportion of time spent in each dimension. O’Connor and colleagues (1999) found that time spent on phonological and print awareness activities did not differ by professional development conditions.

**Quality of Instruction.** Nine studies observed and recorded the quality of instruction as a dependent variable using standardized measures or researcher developed tools (Abe et al. 2013; Al Otaiba et al., 2016; Al Otaiba et al., 2011; Babinski et al, 2018; Brownell et al., 2017; Connor et al., 2011; Matsumura et al., 2013; Nelson-Walker et al., 2013; Parkinson et al., 2015). Brownell and colleagues (2017) developed a tool to measure the quality of instruction in word study, word fluency, and fluency of connected text. Nelson-Walker et al. (2013) observed teachers using a modified standardized measure to examine instructional intensity. Parkinson et al. (2015) used a standardized observational tool to collect data on general classroom environment and language and literacy. Matsumura and colleagues (2013) used a standardized tool to evaluate the quality of classroom text discussions. Abe et al. (2013) observed teachers using a Likert scale ranging from 0-4 to measure implementation of English-language learner focused-strategies. Another study observed the implementation of effective teaching strategies learned in ongoing PD sessions (Babinski et al., 2018).

Three of the nine studies used videotapes to code literacy instruction (Al Otaiba et al., 2011; Al Otaiba et al., 2016; Connor et al., 2011). Al Otaiba et al. (2011) and Al Otaiba et al. (2016) developed a low-inference observational tool to rate individualization of instruction. The 3-scale instrument ranged from 0 as not observed to 3 as highly effective. Coders used the same scale to code for warmth and sensitivity (e.g., how teachers respond to behavior), classroom organization (e.g., how teachers planned small group, center activities), and on-task engagement.
Al Otaiba and colleagues (2011) coded for code-focused and meaning-focused instruction. Additionally, research partners conducted bi-weekly classroom visits and rated teachers on their adherence to A2i and Individualized Student Instruction (ISI). Raters used a scale from 1 (consistently weak) to 6 (exemplary) three times during the school year.

Al Otaiba and colleagues (2016) rated instructional quality for each literacy component observed (e.g., phonological awareness, vocabulary, comprehension) using the same 3-scale instrument as above. Similar to Al Otaiba et al. (2011) and Al Otaiba et al. (2016), Connor and colleagues (2011) also measured warmth and sensitivity, classroom organization, but in addition measured robust vocabulary instruction. Connor and colleagues (2011) also used a rating scale from 1 (low) to 6 (high) to measure fidelity of implementation of the A2i software and ISI.

Eight out of nine studies found a statistically significant treatment effect on at least one aspect of teaching. For example, Brownell et al. (2017) measured the quality of instruction and found statistically significant effects of coaching on quality of word study and fluency instruction. Parkinson et al. (2015) found a statistically significant impact of professional development including coaching on teachers’ use of language and literacy practices and classroom environment. Matsumura et al. (2013) noted a statistically significant impact of coaching on the quality of text discussions. Abe et al. (2013) measured the impacts of coaching on teacher practice using a modified version of the Sheltered Instruction Observation Protocol (SIOP) and found a statistically significant treatment effect. Nelson-Walker et al. (2013) found statistically significant higher rates of group practice opportunities and lower rate of student errors for teachers who received coaching.
Al Otaiba et al. (2016), Al Otaiba et al. (2011), and Connor et al. (2011) measured instructional quality through similar dimensions (e.g., warmth and sensitivity). All three studies found no significant differences on any of the dimensions. Babinski and colleagues (2018) found no differences in the quality of instruction but found that intervention did lead to teachers using more constrained strategies (e.g., Say It, Move It) and unconstrained strategies (e.g., vocabulary text talk).

This systematic literature review extends and refines the findings from existing reviews and meta-analyses of coaching (e.g., Didion, et al., 2020; Kraft et al., 2018) by demonstrating an overall positive effect of coaching focused specifically on supporting teachers’ reading instruction in elementary grades. Kraft and colleagues (2018) identified four aspects of effective coaching based on their review of coaching studies. Coaching should be (a) individualized; (b) sustained over a period of time; (c) context specific (i.e., teacher should be coached based on the context of their classroom); and (d) focused on a specific skill. Consistent with Kraft et al. (2018), all studies in the current review provided coaching over a sustained period of time, and coaching was focused on development of specific reading skills. In a subset of studies, coaches provided individualized support.

In the current review, however, only four of 17 studies focused on coaching teachers on implementing a specific intervention (Nelson-Walker et al., 2013; McMaster et al., 2013; Stein et al., 2008; Tong et al., 2017). Kraft and colleagues (2018) found that providing teachers with coaching and professional development to support the implementation of specific curriculum materials was associated with greater gains in teacher instructional behaviors. Because of the promise of curriculum specific coaching, more research is needed on how to best support teachers implement specific reading programs and interventions with fidelity and quality.
Single-Case Designs that Experimentally Investigated Coaching

Reviews of group design studies provide evidence that coaching can be effective for changing teacher instructional behavior. Single-case research is another feasible and effective design for experimentally investigating interventions in applied settings. Single-case research is widely used in applied settings and can provide “rigorous experimental evaluation of experimental effects” (Kratochwill et al., 2010, p. 2). Single-case designs (SCDs) also allow the researcher to collect documentation of features that were effective for responders and ineffective for non-responders (Kratochwill et al., 2010).

Most single case design studies that have examined the effects of coaching have focused on supporting teachers’ behavior management. For example, Simonsen et al. (2010) implemented a specific teacher training protocol called prompt-occasion-reinforce training (PORT). PORT consisted of two components: explicit teacher training and performance feedback. The researchers used a multiple-baseline design across teachers to monitor three classroom management skills: opportunities to respond (OTRs), specific feedback, and prompts for appropriate behavior (Simonsen et al., 2010). Results indicated that there was not a functional relationship between explicit training and the three classroom management skills. However, after researchers provided teachers with specific performance feedback, there was an immediate increase in these teacher behaviors in the classroom.

There are fewer single case studies that have focused on the effects of coaching on supporting teachers deliver academic instruction during Tier 1 instruction. In one of the few examples, Cuticelli et al. (2017) conducted a multiple-baseline across teachers to evaluate the effects of performance feedback on OTRs and specific praise used during Tier 1 whole group
reading instruction. Participants were all using the same research-based core reading program. The research team provided graphic and verbal feedback to the teachers after each observation during the intervention phase, and an immediate increase in the number and rate of OTRs was noted after specific performance feedback was provided to the teachers. Findings indicate that providing teachers with performance feedback increased their use of OTRs during whole group instruction. Further, this study suggests that providing teachers with both graphic and verbal feedback is an effective coaching strategy for Tier 1 reading instruction.

**Summary of Literature Review and Limitations**

There are a large numbers of children that are reading below grade level and are at risk for future reading difficulties (e.g., NAEP, 2019). Teaching reading is complex and teachers may not be well-prepared or have the knowledge to teach reading well. Professional development can improve the quality of instruction when it is combined with coaching (e.g., Brock & Carter, 2017; Kraft et al., 2018; Yoon et al., 2007) Although there is more general research on the effects of coaching across grade levels and content areas, there is a growing literature on the effects of coaching for improving the quality of reading instruction (e.g., Didion et al., 2020). For example, Leonard et al. (in preparation) found an overall positive effect on coaching paired with professional development in changing teacher’s instructional behavior in reading in elementary schools. Fifteen out of seventeen studies demonstrated a statistically significant association between coaching and a change in teacher outcomes in at least one aspect of teaching (i.e., teacher knowledge, observations, or fidelity of implementation). Further, both Simonsen et al. (2010) and Cuticelli et al. (2017) demonstrated the effectiveness of direct observations and performance feedback for changing teacher behavior using single-case designs.
Despite the growing literature on the effects of reading coaching, there are still significant limitation of the current literature. For example, Kraft and colleagues (2018) found that providing teachers with coaching and professional development to support the implementation of specific curriculum materials was associated with greater gains in teacher instructional behaviors. However, Leonard et al. (in preparation) found only three of 17 group design studies focused on coaching teachers on implementing a specific reading intervention with fidelity and finding from these studies were mixed (Nelson-Walker et al., 2013; McMaster et al., 2013; Stein et al., 2008). Coaches in these studies provided training sessions with teachers that involved reviewing curriculum materials and used specific checklists during observations to monitor fidelity. Similarly, there are very few single case design studies that evaluate the effects of coaching procedures (i.e., performance feedback) on teachers’ implementation of specific reading programs and interventions with fidelity and quality (Citicelli et al., 2017).

Because of the promise of curriculum specific coaching, more research is needed on how to best support teachers implement specific reading programs and interventions with fidelity. Single-case designs are a particularly feasible and effective method for experimentally investigating the impact of coaching on teacher instructional behavior.
Chapter 3

Method

The purpose of the present study was to determine the effectiveness of a specific coaching model on increasing teachers’ use of targeted instructional behaviors during implementation of an evidence-based reading program. More specifically, this study was conducted to answer the following research question: Does coaching increase teachers’ use of modeling, opportunities to respond, and specific feedback above and beyond one stand-alone training?

Setting and Participants

This study took place in a public elementary school located in New England serving 430 students in pre-K through fourth grade. The school is located in a rural setting and of the 430 students, approximately 90% of the students are white. Approximately 14% of the students are free and reduced lunch recipients.

All five second grade teachers in the school were experienced teachers. Although teachers implemented Fundations during whole class instruction since the beginning of the year, they had not received comprehensive professional development or coaching focused on implementing Fundations. Two of the five second grade teachers volunteered to participate in the study. The two second grade teacher participants were teaching Tier 1 Fundations for 30 minutes per day.

Participant One
Teacher participant one is a 40-year old Caucasian female. She had been teaching for 13 years and has a master’s degree. She received no training in Fundations prior to the study and had been teaching Fundations for 4 years.

*Participant Two*

Teacher participant two is a 33-year old Caucasian female. She had been teaching for ten years and holds a master’s degree. She received a one-day Fundations training in the fall and this was her first year teaching this reading program.

*Coach*

The primary investigator was the coach. The primary investigator had ten years of teaching experience in elementary schools in both general and special education. She had five years of experience as an external literacy consultant during which she trained and mentored school-based reading coaches and supported both classroom teachers and reading interventionists implement effective reading instruction and intervention. The investigator attended a one-day training on Fundations prior to the study, identical to the training teacher participant two received.

*Research Design*

This study used a single-case design. Single-case designs are widely used in applied educational settings (Kratochwill et al., 2010) because they can “evaluate interventions in ways that are more compatible with the demands of programs in applied contexts such as classrooms, hospitals, clinics, businesses, and the community” (Riley-Tillman & Burns, 2009, p. vii). Specifically, a multiple-baseline was used, which involves an effect across participants, settings, or behaviors. This study used a multiple-baseline across behaviors. A multiple-baseline design
across behaviors is a series of A-B designs within one participant, with a staggered implementation of intervention phases (A denoting baseline and B denoting the intervention phases; Riley-Tillman & Burns, 2009). Comparisons are made both between and within phases. In multiple-baseline designs the minimum number of phase repetitions is three (Horner et al., 2005; Kratochwill et al., 2010). Therefore, in a multiple baseline across behaviors that would translate into three different baseline phases followed by three intervention phases with each participant. The design requires at least one participant and the manipulation of three behaviors measured across time. Inferences are based on examining the behaviors across three different baseline conditions (Kazdin, 2011). The behaviors must be stable in baseline before introducing the intervention targeting one of the behaviors. An overview of the study design is provided below.

In this study, baseline observation data was collected on the following target teacher instructional behaviors during implementation of Fundations: modeling, opportunities to respond (group responses and individual responses), and specific feedback. After collecting a minimum of five data points per behavior and after the data demonstrated stability, the two participating teachers received one-hour of training that was designed to approximate the typical stand-alone professional development provided in schools. The training focused on the importance of the three target instructional behaviors (i.e., modeling, opportunities to respond, and specific feedback). Again, after a minimum of five data points was collected and after the data demonstrated stability post training, the coaching intervention was implemented in a staggered fashion by introducing each of the three target instructional behaviors one at a time. This staggered schedule allowed the researcher to demonstrate experimental control, and determine if
there was a functional relationship between coaching and the frequency of each of the target instructional behaviors.

**Measures (Dependent Variable)**

Direct observations were conducted across all time intervals (i.e., baseline, training, and coaching intervention) to measure teachers’ use of target instructional behaviors (i.e., modeling, opportunities to respond, and specific feedback) and fidelity of implementation of Fundations.

**Classroom Observations of Student Teacher Interactions (COSTI).** Classroom observations of instructional behaviors and fidelity to Fundations were conducted by trained doctoral level students and occurred daily over the course of the study during the entire 30-minute whole group Fundations reading lesson. Observers were trained to use the COSTI (Doabler, Baker, Kosty, Clarke, Miller, & Fien, 2015; Smolkowski & Gunn, 2012). The COSTI is a standardized observation protocol that has been used to document the frequency of explicit instruction in both reading and math interventions. The COSTI documents four teacher instructional behaviors: (a) teacher models; (b) student practice opportunities (individual and group); (c) student errors; and (d) teacher feedback (i.e., reinforcing correct responses, and correcting incorrect responses). Observers indicate every instance of target behaviors by coding the frequency of occurrence across the 30-minute lesson. All four behaviors are representative of the cyclical nature of explicit instruction (Doabler et al., 2015). For example, when students are learning a new skill, the teacher provides modeling. “This is the letter m. The sound the letter m makes is /m/.” Then, students may be invited to respond as a group. “What sound does the letter m make?” If the students answer correctly, the teacher can say, “That’s right the letter m makes the sound /m/.” In this case, the teacher provided specific feedback on the correct
answer. However, if a student answers incorrectly or does not respond at all (which also indicates an incorrect response), the teacher might say, “The letter m makes the sound /m/. Everyone, what sound? That’s right. The letter m makes the sound /m/.” The teacher provided immediate corrective feedback by modeling the correct response and providing an additional practice opportunity. The frequency and sequence of each of these instructional behaviors is captured by the COSTI observation protocol (see Appendix A for an example of a COSTI observation recording sheet). The frequency of each instructional behavior was then converted to rate by taking the total number of each behavior observed and dividing by the number of minutes observed. These rates were graphed and analyzed using visual analysis.

The COSTI was also adapted to document fidelity of Fundations. During observations, data collectors, documented each Fundations activity that was implemented during the lesson and compared it to the teacher’s manual to determine whether all activities were implemented as intended (shown at the top and middle of the COSTI observation recording sheet). In addition, data collectors recorded the length of the entire lesson as well as the length of each activity. Data collectors also noted if the lesson was interrupted due to a class interruption (e.g., fire drill) or change in schedule. During post-observation conferences, the primary investigator discussed whether all Fundations activities were observed, the pacing of the Fundations lesson, and if activities were completed as intended.

**COSTI Training.** Prior to conducting the training with data collectors, the primary investigator was trained by an expert in the COSTI observation protocol and demonstrated reliability. Two doctoral level students received five hours of training on the COSTI. The primary investigator co-facilitated the training with an expert in the COSTI observation protocol who joined via video conference. The training (see Appendix B for the PowerPoint) consisted of
(a) providing operational definitions for the target instructional behaviors (i.e., modeling, opportunities to respond, and academic feedback); (b) viewing multiple videos that demonstrated examples and non-examples of the target instructional behaviors; (c) practice coding Fundations videos using the COSTI; and (d) scheduling reliability checks.

**Data collector training and inter-observer agreement.** Prior to collecting data in second grade classrooms, the two data collectors documented inter-observer agreement on the COSTI using the smaller/larger index (smaller number of observed behavior/larger number of observed behavior; Hintze, 2005) across two consecutive video observations of teachers implementing Fundations. One of the data collectors demonstrated 98% reliability for video one and 93% reliability for video two. The other data collector demonstrated 92% reliability for video one and 96.5% reliability for video two. Acceptable inter-observer reliability should be at least eighty percent (Kratochwill et al., 2010).

According to What Works Clearinghouse standards, a single-cased design should collect inter-observer agreement across twenty percent of the data points in each condition (Kratochwill et al., 2010). Therefore, for each phase and participant, reliability was collected for at least 30% of the observations. Teacher one was observed by both the primary investigator and one of the data collectors for 50% of the sessions with an average of 96.56% inter-observer agreement. Teacher two, reliability was observed by both the primary investigator and one of the data collectors for 48% of the sessions with an averaging 96.38% inter-observer agreement.

**Inter-observer agreement for Teacher Participant One.** During baseline, inter-observer agreement was collected for 50% of the observations averaging 96.5%. During the training phase, inter-observer agreement was collected for 50% of the observations averaging 95.67%.
During the intervention phase, inter-observer agreement was collected for 50% of the observations averaging 96.89%.

**Inter-observer agreement for Teacher Participant Two.** During baseline, inter-observer agreement was collected for 33% of the observations averaging 99.3%. During the training phase, inter-observer agreement was collected for 67% of the observations averaging 95.5%. During the intervention phase, inter-observer agreement was collected for 50% of the observations averaging 95.78%.

**Fundations**

Fundations (Wilson, 2004, 2012) is a systematic phonics program that can be implemented in Tier 1 or whole class instruction for 30 minutes per day and/or in Tier 2 small group intervention, for students who are presenting difficulties in reading, for 30 minutes three to five times per week. Fundations can be implemented in grades kindergarten through third grade and is designed around a five-day school week. Skills are repeated throughout the week, but daily routines differ. Specific skills that are taught in Fundations include: phonological awareness, letter sounds, alphabetic principle, letter formation, vocabulary, high frequency words, fluency, and comprehension.

Whole class Tier 1 Fundations instruction is based on a five-day school week. The content is broken down into units that last between two to three weeks. Fundations incorporates new content with systematic, cumulative review. For example, new concepts introduced in Unit 3 include closed syllable exceptions taught as welded or glued sounds, and vowel teams. A typical lesson includes between two to four activities. For example, a typical day 1 of each unit has three activities, starting with Drill Sounds/Warm Up to practice review sounds and any
challenging sounds. The next activity is Introduce New Concepts that provides review and then introduces the new concept (e.g., the new syllable type). Day 1 usually ends with introducing new irregular words for the week. Typically, day 1 introduces all skills that will be taught and reviewed throughout the week. New sound cards are introduced. Then, the teacher models building words with the new sound and provides guided practice.

**Procedures**

Prior to collecting data, the primary investigator met with teachers to obtain written consent and explain data collection procedures. During the meeting, the primary investigator answered questions about the study and explained the consent and video release forms (see Appendix C and Appendix D). The teachers signed consent forms at the meeting. Teachers were given student information forms to send home with their students (see Appendix E).

**Baseline Observation**

After obtaining written consent, data collectors began observing and collecting data during Tier 1 whole group Fundations instruction. Teachers staggered their implementation time; one teacher implemented her whole group lesson from approximately 9:30-10:00 and the second teacher from 10:30-11:00. Data collectors collected data daily using the COSTI to record teachers’ use of target instructional behaviors (i.e., modeling, opportunities to respond, and specific feedback) and to document fidelity to Fundations. During the baseline phase, eight data points were collected for teacher participant one and nine data points were collected for teacher participant two.

**Training**
Once baseline data was determined to be stable, the primary investigator delivered a one-time training designed to approximate the typical professional development provided in schools. Teachers received one-hour of professional development training that included an overview of the target instructional behaviors (i.e., modeling, opportunities to respond, and specific feedback). Training consisted of explicit modeling of target instructional behaviors during general instructional practice, examples and non-examples of target behaviors, as well as guided practice. For example, during the training a video was shown that illustrated a good example of a teacher model. The instructor said, “My turn” to indicate a teacher model and “your turn” to indicate students to respond. The students responded by repeating what the teacher had just modeled. The training was delivered before school in a one-to-one format. Training materials are included in the appendices (see Appendix F).

After the training was delivered, data collectors observed for six days for each of the teacher participants to determine the effect of standard professional development training and ensure stability of the data before the coaching intervention was introduced.

*Intervention*

The intervention phases lasted for a total of eighteen days. After the modeling component of the coaching intervention was implemented, eighteen data points were collected before adding opportunities to respond to the coaching. Then twelve data points were collected before adding academic feedback. After all coaching components were incorporated into the coaching intervention, an additional five data points were collected. During this time, the coach observed and conducted post-observation conferences for a total of six times for each teacher. The post-observation sessions focused on each of the behaviors for two sessions.
Coaching Intervention. The intervention consisted of the coach conducting direct observations one to two times per week of teachers implementing Fundations during the 30-minute whole group reading block and facilitating post observation meetings. During the observations, the coach (i.e., the primary investigator) collected target teacher instructional behaviors and fidelity data using the COSTI (Doabler et al., 2015; Smolkowski & Gunn, 2012) observation protocol. One to two times per week, the coach observed teachers, collected data on fidelity of Fundations and the frequency of the target instructional behavior, and met with the teachers for a post observation feedback session. During each phase, the coach supported teachers to incorporate one instructional behavior at a time in a staggered schedule format. First, the coach and teacher focused on modeling, then opportunities to respond, then specific feedback. Once data was stable for an instructional behavior, the coach incorporated another target instructional behavior. This occurred until the coach had the opportunity to work with the teacher through all three target instructional behaviors. The entire intervention lasted approximately four weeks.

Components of the Coaching Intervention

Observation

The coach monitored the teacher’s frequency of target instructional behaviors and fidelity of Fundations using the COSTI. During observations, the coach used the COSTI to document all instructional behaviors, but only shared relevant data with teachers during the follow up coaching session. For example, during the first coaching phase, the coach shared only modeling data with the teacher and during the second coaching phase, the coach continued sharing
modeling data, and added data on opportunities to respond. Teacher observations occurred one to two times per week and post observation feedback happened the following day.

**Post Observation Meeting**

After each observation, the coach met with each teacher individually. During the post observation conference, the coach: (a) discussed with the teachers what went well and what they would change in the lesson; (b) provided feedback based on the fidelity and COSTI observations; (c) provided an operational definition of the target instructional behavior and shared data; (d) described and modeled how target instructional behaviors could be incorporated into Fundations; and (e) developed a plan to ensure that the teacher focused on incorporating the target instructional behavior during their implementation of Fundations. The post observation meeting was guided by an explicit protocol (see Appendix G).

**Fidelity and COSTI Observations.** The coach started each session by asking the teachers what went well with the lesson and what they would change. For example, the teachers talked about the pace of the lesson and engagement. The coach then provided feedback about fidelity to Fundations based on observation data. The coach and teachers discussed if all activities in the Fundation lesson were (a) completed; (b) paced appropriately; and (c) implemented as intended.

**Target Instructional Behavior and Review of Data.** Next, the coach provided an operational definition of the target instructional behavior. The coach and the teacher then examined the graphed data to discuss frequency and rate of the target behavior(s) and whether the behavior increased or decreased. Frequency was determined by the number of occurrences of each behavior in the 30-minute lesson. Rate was determined by the number of occurrences of
each behavior per minute. The coach and teacher also examined the stability of the data and discussed explanations for any variability.

**Review of Lesson Plans.** The coach presented and reviewed enhanced lesson plans that were developed to ensure the use of the target behavior(s) within Fundations. The lesson plans detailed when the teacher should provide modeling, opportunities to respond, and/or examples of specific feedback within the Fundations program. This enhanced lesson plan was used to increase target instructional behaviors. For example, when the target instructional behavior was group responses, the enhanced lesson plan prompted the teachers to ask whole-group questions and use a consistent signal for students to respond in unison. The following is an example of what was embedded in a lesson plan: “Show me with your fingers how many syllables are in the word. Everyone, how many syllables are in the word?” (teacher raises her hand and lowers hand for response – can either clap, snap - a consistent signal for students to respond).

To develop the enhanced lesson plans, the coach reviewed each lesson in the teacher’s manual, identified where the target instructional behavior(s) could be increased, and added instructional language and prompting to support teachers incorporate the instructional behavior(s). An example of an enhanced lesson plan developed to increase group responses, the target behavior, and modeling, the previously taught behavior can be found in the appendices (see Appendix H).

**Coaching Fidelity**

The following procedures were used to document the fidelity of the coaching intervention. First, the coach met with the data collector who observed in classrooms the day of the coaching observation to compare results from the COSTI and ensure that the coach was
sharing accurate data with each teacher. Reliability was calculated immediately after the observation (inter-observer agreement was presented above). Second, the post observation conferences with the coach and teacher were video recorded. Data collectors viewed videos and used a checklist of the steps of the post observation coaching procedures to document fidelity and consistency of the coaching intervention. An example of the checklist is provided in the appendices (see Appendix I). Results indicated that the coach followed the coaching procedures 100% of the time.

**Experimental Design and Analysis**

Visual analysis was used to inspect teacher data to determine if the intervention was effective in changing teacher instructional behaviors. According to What Works Clearinghouse, there are six features that should be examined within and between phase data patterns (Kratochwill et al., 2010). Visual examination of data within a phase considers: (a) level, (b) trend, and (c) variability (Kratochwill et al., 2010). Level refers to the average of the data points within a phase. Trend refers to the slope of the data and whether the data suggests a positive or negative response. Variability refers to the range of the data and how the data aligns with the trend.

Examination of effects across phases is determined by considering (a) immediacy of the effect, (b) overlap, and (c) consistency of data patterns across phases (Kratochwill et al., 2010). Immediacy of the effect examines the last three data points in one phase and compares them to the first three data points in the following phase to determine if there was a change in level. Overlap examines the overlap of data between phases which could indicate a weak effect. Finally, consistency of data patterns examines whether data across all similar phases are the
same. For this multiple-baseline design, all baseline phases were compared, all training phases were compared, and all intervention phases were compared to determine if there was a causal relationship between the coaching intervention and changes in teacher instructional behaviors (Kratochwill et al., 2010).

Effect sizes were also calculated using the single-case effect size calculator Version 0.5 Web application (Pustejovsky & Swan, 2018) to help interpret the magnitude of results. Two effect sizes were calculated, a non-parametric measure, Tau-U, and a parametric measure, Logs Response Ratio (LRR). Tau-U analysis “combines nonoverlap between phases with trend from within the intervention phase” (Parker et al., 2011. p. 284). According to Parker and Vannest (2009), an effect size of 65% or lower is a weak or small effect, an effect size between 66% to 92% is a medium to high effect, and an effect size between 93% to 100% is a large or strong effect. For this study, Tau-U contrast analysis was conducted between (a) each baseline phase and the corresponding training phase and (b) the training phase and the corresponding intervention phase.

In addition, LRR analysis was conducted to quantify the proportion of change from one phase to the next (Pustejovsky & Swan, 2018). LRR were also calculated between baseline phase vs. training phase and training phase vs. intervention phase for each of the three instructional behaviors in order to examine the proportion of change between phases. LRR is calculated on a ratio scale from 0 to 1, so that a score of 0 would indicate the absence of the outcome (Pustejovsky, 2018). LRR effect sizes also allow for interpreting the proportion of change due to the intervention (Pustejovsky, 2018). LRR has two variants that can correspond to whether the intervention hypothesizes an increasing trend or decreasing trend (Pustejovsky & Swan, 2018). In other words, in order to calculate LRR, you choose which direction, increase or decrease, is
the desired outcome of the intervention. For example, when calculating group responses, Logs Response Ratio increase (LRRi) was calculated because the purpose of the intervention was to increase group responses. However, when calculating individual responses, Logs Response Ratio decrease (LRRd) was calculated because the purpose of the intervention was to decrease individual responses. LRR contrast analysis was also conducted between (a) each baseline phase and the corresponding training phase and (b) the training phase and the corresponding intervention phase.
Chapter 4

Results

This chapter presents the results of the study. Visual analysis, descriptive statistics, and Tau-U and LLR effect sizes are used to answer the research question for each participant: Does coaching increase teachers’ use of modeling, opportunities to respond, and specific feedback above and beyond one stand-alone training? The chapter also includes information about fidelity to the coaching process.

Teacher Participant One

Teacher participant one was a 40-year old Caucasian female who had been teaching for 13 years. She received her Master’s degree in education and has been teaching Fundations for four years.

Modeling

Baseline data on the rate of teacher models per minute were collected during whole class implementation of Fundations for eight days and were stable ($Mdn=0.19$, Range 0.07-0.46) and visual analysis showed a slight decreasing trend. During the training phase (e.g., after the stand-alone training on effective teaching behaviors) six data points were collected. The data were stable ($Mdn=0.07$, Range 0.00-0.29) and visual inspection of the data indicated a slight decreasing trend with three data points that showed non-overlap between the baseline phase and training phase (50%). Tau-U effect size for baseline vs. training phase for modeling was -0.12, indicating a small or weak effect. Logs Response Ratio increase (LRRi) was calculated because after the training it was expected that the rate of teacher models would increase. However, LRRi
indicated a negative effect size (LRRi= -0.54). The percent change in behavior between baseline and training was -42, which can be interpreted as the rate of teacher models decreased by 42%.

During the intervention phase there were eighteen data points collected. Visual inspection of the data showed an immediate increase in teacher models and an increasing trend (Mdn= 1.64, Range 1.3-2.14). As the range indicates, there was some variability in the data, but they became more stable towards the end of the intervention. Tau-U effect size for training vs. intervention phase was 1.02, indicating a strong effect. LRRi was 2.54 with a percent change of 1168, which can be interpreted as the rate of teacher models increased by 1168%.

**Group Responses**

Baseline data on the rate of group responses per minute were collected for eight days and were relatively stable (Mdn=1.55, Range=0.33-1.8) with one outlier data point on day seven. Visual inspection of the data indicated a slightly decreasing trend. During the training phase eleven data points were collected. The data were stable with an increasing trend (Mdn=1.74, Range 1.16-2.00). It is important to note that there were seven missed data points due to school cancellations. Tau-U effect size for baseline vs. training phase was 0.39, indicating a small or weak effect. LLRi was 0.39 indicating a weak effect with a percent change of 17, which can be interpreted as the rate of group responses increased by 17%.

During the intervention phase there were thirteen data points collected. Visual inspection of the data indicated some variability with an increasing trend in the rate of group responses (Mdn=2.03, Range=1.79-2.96). Between the training and intervention phase, there were some overlap in data. Seven out of thirteen data points did not overlap and were higher during the intervention phase (54%). There was not an immediate effect of the intervention on group
responses. **Tau-U effect size for training vs. intervention phase was 0.71**, indicating a medium effect. **LLRI was 0.27** with a percent change of 31, which can be interpreted as the rate of group responses increased by 31%.

**Individual Responses**

Baseline data was collected on the rate of individual responses per minute for eight days and was extremely variable (Mdn=2.85, Range 1.08-3.93). Because the trend was increasing, and was the opposite desired direction of the behavior (e.g., it was hypothesized that training would result in an increase in group responses and a decrease in individual responses), the next phase was implemented. During the training phase there were eleven data points collected. Visual inspection of the data indicated a decreasing trend with all but one data point that showed non-overlap between the baseline phase and training phase (9%). The data were stable for the last five data points (Mdn=2.26, Range 1.0-3.52). **Tau-U effect size for baseline vs. training phase was 0.39**, indicating a small or weak effect. **LLRD was -0.23**, with a percent change of -21, which can be interpreted as the rate individual responses decreased by 21%.

During the intervention phase thirteen data points were collected. Visual inspection indicated some variability with a slight decreasing trend (Mdn=0.96, Range 0.55-1.4). Between the training and intervention phase, there was some overlap in data. Seven out of thirteen data points did not overlap and were lower during the intervention phase (54%), which was the hypothesized direction of the effect. There was not an immediate effect of the intervention. **Tau-U effect size for training vs. intervention phase was 0.48**, indicating a weak or small effect. **LLRD was 0.01** with a percent change of 1, which can be interpreted as the rate of individual responses decreased by 1%.
**Academic Feedback**

Baseline data were collected on the rate of academic feedback per minute for eight days and were stable for the first five data points, while the last three data points showed some variability (Mdn=0.49, Range 0.41-1.48). There was an increasing trend towards the desired direction and therefore the next phase was implemented. During the training phase there were nineteen data points collected. Visual inspection of the data indicated the trend was very stable with only a slight increase (Mdn=0.74, Range 0.41-1.33). Tau-U effect size for baseline vs. training phase was 0.22, indicating a small or weak effect. LLRi was 0.14, with a percent change of 15, which can be interpreted as the rate of academic feedback increased by 15%.

During the intervention phase there were five data points collected. Visual inspection indicated that the data were relatively stable with a slight decreasing trend (Mdn=0.83, Range 0.73-1.18). Between the training phase and intervention phase there was 100% overlap of data. Tau-U effect size for training vs. intervention phase was 0.02, indicating a weak or small effect. LLRi was 0.15 with a percent change of 16, which can be interpreted as the rate of academic feedback increased by 16%.

**Consistency of Data in Similar Phases**

Data were visually inspected for Teacher Participant 1 within each phase across all conditions (e.g., modeling, opportunities to respond, and academic feedback in baseline phase, training phase, and intervention phases) to examine consistency in data patterns (Kratochwill et al., 2010). In the baseline phase, modeling was stable and the rate was relatively low. However, for opportunities to respond there was significant variability for individual responses with an increasing trend. During baseline for group responses, the data were relatively stable. Data for
academic feedback showed an increasing trend in the last three data points. Therefore, data patterns during baseline were not consistent.

Training phases for modeling, group responses, and academic feedback were all relatively stable, although group responses showed a slight increasing trend. However, individual responses showed a clear decreasing trend. The data were stable for individual responses during the training phase until the modeling intervention was implemented. Once the modeling intervention was implemented, individual responses decreased, which suggests a lack of experimental control. In other words, the modeling intervention seemed to directly impact, and decrease, individual responses during the training phase. Therefore, not all training phases demonstrated consistent data patterns.

Intervention phases for all behaviors were relatively stable. Modeling, group responses, and individual responses all showed an increasing trend. The increasing trend for individual responses was the opposite from the predicted direction. Academic feedback showed a decreasing trend, which was the opposite from the predicted direction. Therefore, the intervention phase patterns were inconsistent.

**Summary of Teacher One Data**

Through visual analysis and examination of descriptive statistics and effect sizes between phases, it is evident that there were two effects. According to What Works Clearinghouse, “an effect is demonstrated if manipulation of the independent variable is associated with predicted change in the pattern of the dependent variable” (Kratochwill et al., 2010, p. 18). Visual analysis for modeling indicated an immediate change in level once the intervention started. The effect size of Tau-U of the training phase vs. intervention phase was 1.02, which is a strong effect.
Further, LLRi was 2.54 with a percent change of 1168, which can be interpreted as the rate of teacher models increased by 1168% due to the intervention.

The coaching intervention also had an effect on group responses. Visual analysis indicated a steady increase from the baseline phase to the training phase to the intervention phase. There was overlap from the baseline phase to the training phase, and still some overlap from the training phase to intervention. However, the majority of the data points from the training phase to the intervention phase showed no overlap. Tau-U effect size for training vs. intervention phase was 0.71, indicating a medium effect. LLRi was 0.27 with a percent change of 31, which can be interpreted as the rate of group responses increased by 31% due to the intervention.

Follow-Up

Two weeks after data collection ceased, the coach observed teacher participant one to check for maintenance. The teacher did not have an enhanced lesson plan that explicitly detailed when the teacher should provide modeling, opportunities to respond, and/or examples of specific feedback within the Fundations program like they did during the intervention phase. They used their regular teacher’s manuals to implement the lesson. Data indicate that similar levels of rate of teacher models were evident when compared to the intervention phase. Rate of group responses were high and individual response were low, again similar to the intervention phase. Lastly, the rate of academic feedback remained stable, similar to the intervention phase.
Figure 1

Rate of Target Instructional Behaviors per Minute for Teacher Participant One Across Baseline, Training and Coaching Phases
Teacher Participant Two

Teacher participant two was a 33-year old Caucasian female who had been teaching for 10 years. She has her Master’s degree in education. This was her first year teaching level two Fundations.

**Modeling**

Baseline data on the rate of teacher models per minute were collected during whole class implementation of Fundations for nine days and were stable \((Mdn=0.29, \text{ Range } 0.00-0.47)\) and visual analysis showed a slight decreasing trend. During the training phase (e.g., after the stand-alone training on effective teaching behaviors) six data points were collected. The data were stable \((Mdn=0.29, \text{ Range } 0.00-0.55)\) and visual inspection of the data indicated a slight decreasing trend with one data point that showed non-overlap between the baseline phase and training phase (17%). Tau-U effect size for baseline vs. training phase was 0.17, indicating a small or weak effect. LRRi was 0.03 with the percent change in behavior between baseline and training was 3, which can be interpreted as the rate of teacher models increased by 3%.

During the intervention phase there were eighteen data points collected. Visual inspection of the data showed an immediate increase in teacher models and an increasing trend \((Mdn= 1.42, \text{ Range } 0.6-2.4)\). There was no overlap in data between the training phase and the intervention phase. Tau-U effect size for training vs. intervention phase was 1.06, indicating a strong effect. LRRi was 1.65 with a percent change of 420, which can be interpreted as the rate of teacher models increased by 420%.

**Group Responses**
Baseline data on the rate of group responses per minute were collected for nine days and were variable ($Mdn=1.94$, Range 1.13-2.72). Visual inspection of the data indicated an increasing trend in the rate of group responses (i.e., the desired direction of the behavior), and therefore the next phase was implemented. During the training phase there were twelve data points collected. The data were stable with no trend on group responses ($Mdn=2.00$, Range 0.97-3.23) and only two data points that showed non-overlap between phases (33%). Tau-U effect size for baseline vs. training phase was -0.11, indicating a small or weak effect. LLRi was -0.01 with a percent change of -1, which can be interpreted as the rate of group responses decreased by 1%.

During the intervention phase twelve data points were collected. Visual inspection of the data indicated some variability with an increasing trend in the rate of group responses ($Mdn=2.67$, Range=1.22-3.69). Between the training and intervention phase, there were some overlap in data. Four out of twelve data points did not overlap and were higher during the intervention phase (33%). There was not an immediate effect of the intervention on group responses. Tau-U effect size for training vs. intervention phase was 0.63, indicating a small to medium effect. LLRi was 0.32 with a percent change of 38, which can be interpreted as the rate of group responses increased by 38%.

**Individual Responses**

Baseline data were collected on the rate of individual responses per minute for nine days and were variable ($Mdn=1.82$, Range 1.03-2.35). Because the trend was increasing, and was in the opposite desired direction of the behavior (e.g., it was hypothesized that training would result in an increase in group responses and a decrease in individual responses), the next phase was
implemented. During the training phase there were twelve data points collected. Visual inspection of the data indicated a decreasing trend with seven data points that show non-overlap between the baseline phase and training phase (58%). The data were stable for the last six data points ($Mdn=1.19$, Range 0.05-2.46). Tau-U effect size for baseline vs. training phase was 0.41, indicating a small or weak effect. LLRd was -0.32, with a percent change of -27, which can be interpreted as the rate of individual responses decreased by 27%.

During the intervention phase twelve data points were collected. Visual inspection indicated the data were stable with a slight increasing trend ($Mdn=0.31$, Range 0.06-0.61). Between the training and intervention phase, there was 100% overlap in data. Tau-U effect size for training vs. intervention phase was 0.46, indicating a weak or small effect. LLRd was 0.01 with a percent change of 1, which can be interpreted as the rate of individual responses decreased by 1%.

**Academic Feedback**

Baseline data were collected on the rate of academic feedback per minute for nine days and were variable ($Mdn=0.61$, Range 0.27-1.03). There was an increasing trend towards the desired direction (e.g., it was hypothesized that training would result in an increase in academic responses), and therefore the next phase was implemented. During the training phase there were nineteen data points collected. Visual inspection of the data indicated the trend was very stable with only two data points that showed non-overlap ($Mdn=0.59$, Range 0.26-1.09, 11%). Tau-U effect size for baseline vs. training phase was -0.20, indicating a small or weak effect. LLRi was -0.03, with a percent change of -3, which can be interpreted as the rate of academic feedback decreased by 3%.
During the intervention phase there were five data points collected. Visual inspection indicates that the data were relatively stable with a decreasing trend ($Mdn=1.58$, Range 1.025-1.69). There was an immediate increase in data once the intervention was implemented. Between the training phase and intervention phase there were four data points that show non-overlap (80%). Tau-U effect size for training vs. intervention phase was 1.09, indicating a strong effect. LLRi was 0.86 with a percent change of 137, which can be interpreted as the rate of academic feedback increased by 137%.

**Consistency of Data in Similar Phases**

Data were visually inspected for Teacher Participant 2 within each phase across all conditions (e.g., modeling, opportunities to respond, and academic feedback in baseline phase, training phase, and intervention phases) to examine consistency in data patterns (Kratochwill et al., 2010). Baseline for modeling was stable and the rate was relatively low. However, for opportunities to respond there was significant variability for individual responses with an increasing trend, which is the opposite desired direction of the behavior. During baseline for group responses, the data also show an increasing trend. Data for academic feedback showed an increasing trend as well. Data patterns for individual responses, group responses, and academic feedback all show an increasing trend, while data for modeling remained relatively stable. Therefore, not all phases demonstrated consistent data patterns.

Training phases for modeling, and academic feedback were relatively stable. Group responses showed a slight increasing trend. However, individual responses showed a drastic decreasing trend. The data was stable for individual responses during the training phase until the modeling intervention was implemented. Once the modeling intervention was implemented,
individual responses decreased, which indicated lack of experimental control. In other words, the modeling intervention directly impacted and decreased individual responses during the training phase. Therefore, not all phases demonstrated consistent data patterns.

The intervention phases for both modeling and academic feedback showed an immediate increase in behavior. However, data for modeling showed an increasing trend, while data for academic feedback showed a decreasing trend. The data trend for group responses and individual responses showed an increase in the rate of each behavior. All phases showed a change in rate in the desired direction of the behavior, but the trends were different. Therefore, not all phases demonstrated consistent data patterns.

**Summary of Teacher Two Data**

Through visual analysis and effect sizes between phases, it is evident that there were two effects. According to What Works Clearinghouse, “an effect is demonstrated if manipulation of the independent variable is associated with predicted change in the pattern of the dependent variable” (Kratochwill et al., 2010, p. 18). Visual analysis for modeling indicated an immediate change in level once the intervention started. The effect size of Tau-U of the training phase vs. intervention phase is 1.06, indicating a strong effect. Further, the effect size of LRRi was 1.65 with a percent change of 420, which can be interpreted as the rate of teacher models increased by 420%.

The coaching intervention also had an effect on academic feedback. Visual analysis indicated an immediate effect in level once the intervention was implemented. There was overlap from the baseline phase to the training phase, and there was only one data point that shows overlap from the training phase to the intervention phase. Tau-U effect size for training
vs. intervention phase was 1.09, indicating a strong effect. LLRi was 0.86 with a percent change of 137, which can be interpreted as the behavior increased by 137% due to the intervention.

Follow-Up

Two weeks after data collection ceased, the coach observed teacher participant two to check for maintenance. The teacher did not have an enhanced lesson plan that explicitly detailed when the teacher should provide modeling, opportunities to respond, and/or examples of specific feedback within the Fundations program like they did during the intervention phase. They used their regular teacher’s manuals to implement the lesson. Data indicate that similar levels of rate of teacher models were evident when compared to the intervention phase. Rate of group responses were high and individual response were low, again similar to the intervention phase. Lastly, the rate of academic feedback remained stable, similar to the intervention phase.
Figure 2

Rate of Target Instructional Behaviors per Minute for Teacher Participant Two Across Baseline, Training and Coaching Phases
Table 1  

*Descriptive Statistics Across Behaviors*

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Number of Observations</th>
<th>B1-M</th>
<th>T-M</th>
<th>I-M</th>
<th>B1-GR</th>
<th>T-GR</th>
<th>I-GR</th>
<th>B1-IR</th>
<th>T-IR</th>
<th>I-IR</th>
<th>B1-AF</th>
<th>T-AF</th>
<th>I-AF</th>
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<tbody>
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<td>13</td>
<td>8</td>
<td>19</td>
<td>5</td>
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<tr>
<td></td>
<td>Median</td>
<td>0.19</td>
<td>0.07</td>
<td>1.64</td>
<td>1.55</td>
<td>1.74</td>
<td>2.03</td>
<td>2.85</td>
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<td></td>
<td>Range</td>
<td>0.07-0.46</td>
<td>1.3-2.14</td>
<td>0.33-1.8</td>
<td>1.16-2.00</td>
<td>1.79-2.96</td>
<td>1.08-3.93</td>
<td>1.0-3.52</td>
<td>0.55-1.4</td>
<td>0.41-1.48</td>
<td>0.41-1.33</td>
<td>0.73-1.18</td>
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</tr>
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<td>2</td>
<td></td>
<td>9</td>
<td>6</td>
<td>18</td>
<td>9</td>
<td>12</td>
<td>12</td>
<td>9</td>
<td>12</td>
<td>12</td>
<td>9</td>
<td>19</td>
<td>5</td>
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<tr>
<td></td>
<td>Median</td>
<td>0.29</td>
<td>0.29</td>
<td>1.42</td>
<td>1.94</td>
<td>2.00</td>
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<td>1.19</td>
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<td>0.61</td>
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<td>Range</td>
<td>0.00-0.47</td>
<td>0.6-2.4</td>
<td>1.13-3.23</td>
<td>0.97-3.69</td>
<td>1.22-2.35</td>
<td>1.03-2.46</td>
<td>1.05-0.61</td>
<td>0.27-1.03</td>
<td>0.26-1.09</td>
<td>1.025-1.69</td>
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</tr>
</tbody>
</table>
### Table 2

**Phase Contrasts: Baseline vs. Training Phases**

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Baseline vs Training - Modeling Contrast</th>
<th>Baseline vs Training - Group Response Contrast</th>
<th>Baseline vs Training - Individual Response Contrast</th>
<th>Baseline vs Training - Academic Feedback Contrast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher 1</td>
<td>( \text{Tau-U}= -0.12 ) ( \text{LRRi}= -0.54 ) 5% CI: [-1.54, 0.46] Percentage change: -42</td>
<td>( \text{Tau-U}= 0.39 ) ( \text{LRRi}=0.16 ) 95% CI: [-0.08, 0.40] Percentage change: 17</td>
<td>( \text{Tau-U}= 0.39 ) ( \text{LLRd}= 0.23 ) 95% CI: [-0.58, 0.11] Percentage change: -21</td>
<td>( \text{Tau-U}= 0.22 ) ( \text{LLRi}=0.14 ) 95% CI: [-0.27, 0.55] Percentage change: 15</td>
</tr>
<tr>
<td>Teacher 2</td>
<td>( \text{Tau-U}=0.17 ) ( \text{LRRi}=0.03 ) 95% CI: [-0.77, 0.83] Percentage change: 3</td>
<td>( \text{Tau-U}=-0.11 ) ( \text{LRRi}=-0.01 ) 95% CI: [-0.24, 0.23] Percentage change: -1</td>
<td>( \text{Tau-U}=-0.41 ) ( \text{LLRd}=-0.32 ) 95% CI: [-0.75, 0.11] Percentage change: -27</td>
<td>( \text{Tau-U}=-0.20 ) ( \text{LLRi}=-0.03 ) 95% CI: [-0.34, 0.28] Percentage change: -3</td>
</tr>
<tr>
<td>Teacher</td>
<td>Training vs Intervention-Modeling Contrast</td>
<td>Training vs Intervention-Group Response Contrast</td>
<td>Training vs Intervention-Individual Response Contrast</td>
<td>Training vs Intervention-Academic Feedback Contrast</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>-----------------------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>Teacher 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
|          | Tau-U=1.02  
|          | LRRi=2.54  
|          | 95% CI: [1.63, 3.45]  
|          | Percentage change: 1168 |
| Teacher 2 | 
|          | Tau-U=1.06  
|          | LRRi=1.65  
|          | 95% CI: [0.98, 2.32]  
|          | Percentage change: 420 |
Fidelity to the Coaching Process

As indicated in Chapter 3, the post conference sessions between the coach and each teacher were video recorded. Data collectors viewed videos and used a checklist of the steps of the post observation coaching procedures to document fidelity and consistency of the coaching intervention. Prior to rating the videos, the primary investigator met with both data collectors to train them on the checklist. The training consisted of: (a) reviewing each item on the checklist; (b) answering questions; (c) watching a video together; (d) collecting reliability data. Both data collectors had 100% agreement on the video. Therefore, they moved onto independently scoring videos. According to What Works Clearinghouse standards, a single-cased design should collect inter-observer agreement across twenty percent of the data (Kratochwill et al., 2010). Therefore, inter-observer agreement was collected on 25% of the videos aside from the video used during the training. Fidelity data is reported in Table 4. As reported, the coaching process was followed 100% of the time during the coaching intervention.
Table 4

*Fidelity to the Coaching Process*

<table>
<thead>
<tr>
<th>Video</th>
<th>Teacher 1</th>
<th>Teacher 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100% *</td>
<td>100% ^</td>
</tr>
<tr>
<td>2</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>3</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>4</td>
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<td>100%</td>
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<tr>
<td>5</td>
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<td>100% *</td>
</tr>
<tr>
<td>6</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note. ^ Reliability during training  
* IOA
Chapter 5

Discussion

We know that coaching can be effective. Kraft and colleagues (2018) identified four aspects of effective coaching based on their review of coaching studies: (a) coaching should be individualized; (b) coaching should be sustained over a period of time; (c) coaching should be context specific (i.e., teacher should be coached based on the program or curriculum they are using in their classroom); and (d) coaching should be focused on increasing teachers’ specific instructional skills. Based on a review of the current literature on literacy coaching (Leonard et al., in preparation), there is a need for more research on the effects of literacy coaching that is context specific (i.e., focused on a specific reading program) and that focuses on increasing teachers’ specific instructional skills.

In the present study, the primary investigator evaluated the efficacy of a coaching intervention to improve two teacher participants’ rate of target instructional behaviors. A single-case, multiple-baseline, across behaviors design was used to evaluate teachers rate of modeling, opportunities to respond (i.e., group responses and individual responses), and academic feedback during whole-class Tier 1 reading instruction of Fundations, an evidence-based program. This study was conducted to answer the following research question: Does coaching increase teachers’ use of modeling, opportunities to respond, and specific feedback above and beyond one stand-alone training?

Data collectors collected the rate of occurrences of each behavior in a 30-minute whole-class lesson of Fundations using the Classroom Observations of Student Teacher Interactions (COSTI, Doabler et al., 2015; Smolkowski & Gunn, 2012) observation protocol during all three
phases of the study (i.e., baseline, training, and intervention). Baseline data was collected for each participant. Once stability was determined, a one-hour stand-alone professional development training was delivered individually to each of the participants that provided an overview of the target instructional behaviors. Lastly, the coaching intervention was implemented in a staggered implementation, focusing on incorporating one target instructional behavior at a time. The coach (i.e., primary investigator) met with each teacher participant individually approximately twice a week during the coaching intervention and (a) discussed with the teachers what went well and what they would change in the lesson; (b) provided feedback based on the fidelity and COSTI observations; (c) provided an operational definition of the target instructional behavior and shared data; (d) described and modeled how target instructional behaviors could be incorporated into Fundations; and (e) developed a plan to ensure that the teacher focused on incorporating the target instructional behavior during their implementation of Fundations. Visual analysis and Tau-U and Logs Response Ratio effect sizes were used to evaluate whether the coaching intervention had effects on teachers’ instructional behaviors.

Summary of Results

Visual analysis and an examination of effect sizes indicated a total of four effects across the two participants out of a possible eight effects. Effects were found for both teachers in modeling. An effect was found for teacher participant one in group responses and an effect was found for teacher participant two in academic feedback.

Modeling

Once the coaching intervention was implemented, there was an immediate increase in the rate of teacher models per minute for both teacher participants and there was no overlap of data
between the training phases and intervention phases. For teacher participant one, Tau-U effect size for training vs. intervention phase was 1.02, indicating a strong effect. LRRi was 2.54 with a percent change of 1168, which can be interpreted as the rate of teacher models increased by 1168%. For teacher participant two, Tau-U effect size for training vs. intervention phase was 1.06, indicating a strong effect. LRRi was 1.65 with a percent change of 420, which can be interpreted as the rate of teacher models increased by 420%.

Although Fundations incorporates modeling, and the teacher’s guide provides explicit wording for how to model different skills and strategies, the program leaves it up to the teacher to decide when modeling is appropriate. For example, although Fundations provides wording for how teachers should model new or challenging sounds, the teacher’s guide also gives teachers the choice to model or have a student lead the review of sound-spelling cards. This guidance may be confusing as it assumes that teachers will know when modeling is needed and will incorporate it as necessary, but teachers in this study were not providing models at high rates. Teachers were not modeling skills during baseline, and even after the primary investigator delivered a training that focused on the importance of modeling during reading instruction, observation data indicated no change in teachers’ rate of modeling after the stand-alone training. Enhanced lesson plans prompted teachers when they should model during Fundations activities and provided explicit language for teachers to use to model key skills. For example, the enhanced lesson plans guided teachers to use phrases such as “This is the word…” to model reading a new word and “Watch me mark up this word” to model circling a suffix or underlining a digraph during a word building activity.

Opportunities to Respond
**Group Responses.** Teacher participant one had a second effect due to the coaching intervention. Visual analysis indicated that there was an effect in the rate of group responses. There was some overlap in data between the training and intervention phase and there was not an immediate effect of the coaching intervention on group responses, but a steady increase from one phase to the next. Tau-U effect size for training vs. intervention phase was 0.71, indicating a medium effect. LLRi was 0.27 with a percent change of 31, which can be interpreted as the rate of group responses increased by 31%. Teacher participant two had no effect for group responses.

Fundations does incorporate opportunities to respond and there are certain activities that emphasize group responses. During trick word practice (i.e., irregular word reading) students are asked to spell the words together and during regular word practice, they tap out the words together to indicate how many sounds are in each word. However, other activities do not provide guidance about whether teachers should elicit group or individual responses. If there was not explicit wording, teacher one was only providing individual responses. Graphic and verbal feedback as well as enhanced lesson plans that provided guidance on how to implement more group responses assisted teacher participant one to increase her group responses. Questions were labeled as to where to implement a group response. For example, when presenting the word of the day, the teacher’s manual suggests having several students use the word in a sentence. During the intervention phase, the enhanced lesson plans incorporated more “turn and talk” activities where students would work with a partner to take turns providing a sentence. “Turn and talk” provides all of the students in the class with an opportunity to participate.

There was not a clear effect for group responses for teacher participant two. A primary reason was that teacher participant two was already implementing high levels of group responses during baseline. However, through visual analysis and examination of effect sizes, the
implementation of the coaching intervention for modeling may have also have had some effect on the rate at which teacher participant two provided opportunities for group responses. Once the modeling intervention was implemented, teacher participant two immediately decreased her rate of group responses indicating lack of experimental control. Three data points after the modeling component of the coaching intervention was implemented, teacher participant two increased the rate of group responses, and when the coaching intervention began focusing on opportunities to respond, this participant’s group responses increased to higher levels than baseline. This increase could be attributed to the ongoing coaching that teachers received and this teacher’s response to her data.

**Individual Responses.** Through examination of visual analysis for both teacher participants, it is evident that once the coaching intervention for modeling was implemented, it directly impacted the rate at which teachers provided opportunities to respond. For both teacher participants, individual responses decreased once the coaching intervention for teacher modeling began. This indicates lack of experimental control because by increasing the rate of teacher models, it may have decreased individual responses. For example, prior to the intervention, during Drill Sounds/Warm-Up (a daily Fundations activity), teachers asked individual students to model sound cards and the class would echo the sounds in a group response. Once the coaching intervention was implemented, teachers modeled the sound cards while the students echoed the sounds in a group response. Therefore, individual responses decreased as a result of the increase in teacher modeling due to the coaching intervention.

**Academic Feedback**
Teacher participant two had a second effect for academic feedback due to the coaching intervention. Visual analysis indicated an immediate increase in the rate of academic feedback per minute once the coaching intervention was implemented with only one overlapping data point between the training phase to the intervention phase (20%). Tau-U effect size for training vs. intervention phase was 1.09, indicating a strong effect. LLRi was 0.86 with a percent change of 137, which can be interpreted as the behavior increased by 137% due to the intervention.

Academic feedback is not embedded into Fundations lessons. There are no suggestions as to how to correct an incorrect response or affirm a correct response in the teacher’s manual, yet during some of the activities, teachers were embedding feedback. For example, during dictation activities, students write words in their student notebook, dry erase board, or gel board. During observations, teacher participants called on one student at a time and affirmed correct responses while doing so. However, teacher participant two was not being specific with her academic feedback. Coaching that included post observation feedback and guided practice assisted teacher participant two to implement more specific academic feedback. Coaching sessions focused on affirming correct responses. For example, instead of saying, “Good job,” we practiced saying “Yes, the sound of b is /b/.” Based on observations, students made few errors, therefore there were not many opportunities for teachers to provide corrective feedback during the 30-minute lessons.

Teacher participant one had no effect for academic feedback primarily because she was already implementing specific academic feedback at a high rate during baseline. During the intervention, the coach analyzed the observation data as well as Fundations lessons to see if it was possible to increase her group responses through coaching and enhanced lesson plans, but it
was not possible, or desirable, for teacher participant one to increase her already high rates of academic feedback.

During the coaching intervention, it was not possible to directly prompt academic feedback in the enhanced lesson plans because it was not possible to predict how students would respond. The enhanced plans, however, directly prompted teachers to incorporate modeling and group responses in specific places during the lesson. Therefore, coaching teachers on providing academic feedback looked different than coaching on modeling and group responses.

In summary, results from this study suggest that a coaching intervention focused on supporting teachers implement a specific reading program with fidelity and quality can be effective at increasing the rate of important instructional behaviors. The coaching intervention had a clear effect on modeling for both teacher participants, an effect for group opportunities to respond for teacher participant two, and academic feedback for teacher participant one. However, coaching was only impactful for instructional behaviors for which teachers demonstrated low rates of implementation during baseline. In other words, teachers in this study did not necessarily need coaching on all three behaviors. Teacher participant one benefitted from coaching that was focused on increasing modeling and group responses, and decreasing individual responses. However, she did not need support in increasing her academic feedback. Teacher participant two benefitted from coaching focused on modeling and academic feedback. However, she did not need support increasing her group responses.

Connections to Previous Research

*Professional Development and Coaching*
Previous research suggests that professional development consisting of a stand-alone training is not effective and does not reliably improve the quality of classroom instruction or increase student outcomes (Carpenter et al., 1989; Cohen & Hill, 2001; Garet et al., 2001; Garet et al., 2008; Kennedy, 1998; McCutchen et al. 2002). In the present study, teacher participants were provided with a one-hour professional development training that included an overview of the target instructional behaviors (i.e., modeling, opportunities to respond, and specific academic feedback). Training consisted of explicit modeling of target instructional behaviors during general instructional practice, examples and non-examples of target behaviors, as well as guided practice. Based on visual analysis and effect sizes, the stand-alone training had no effect on teacher’s instructional behavior. This finding is consistent with previous research and suggests that stand-alone training is not effective in improving the quality of instruction.

However, we also know from previous research conditions in which professional development may be beneficial (Desimone, 2009; Wayne, Yoon, Zhu, Cronen, & Garet, 2008; Kraft, Blazar, & Hogan, 2018). Based on results from a comprehensive review, Fixsen et al. (2005) recommend that professional development should be ongoing, increase teacher knowledge, and be embedded with frequent opportunities for teachers to practice what is learned in conjunction with coaching support. Didion et al., (2020) also evaluated the research on professional development in reading and found that more extensive PD had an overall positive effect on student reading achievement.

Coaching has been widely endorsed as a means to enhance professional development and improve the quality of instruction (e.g., Teemant et al., 2011). Kraft and colleagues (2018) suggest that coaching is a central mechanism in changing teacher behavior. They identified four key elements of effective coaching. Coaching should be (a) individualized; (b) sustained over a
period of time; (c) context specific (i.e., teacher should be coached based on the program or curriculum they are using in their classroom); and (d) focused on increasing teachers’ specific instructional skills.

The findings of the present study align with previous research and provide additional evidence that supports the effectiveness of professional development that includes coaching. The present study included features of effective coaching that have been identified in previous research and meta-analyses including coaching that was (a) context specific (teachers were coached on increasing target instructional behaviors during the implementation of Fundations); and (b) focused on improving target instructional behaviors. In this study, coaching that provided ongoing training was provided to teachers and results indicated that coaching had an impact on the quality of teachers’ instruction.

Coaching Focused on Fidelity and Quality of a Specific Reading Program

Although the findings of this study converge with previous research on professional development and coaching in general, they also extend the research in important ways and address specific gaps in the literature. Kraft and colleagues (2018) found that providing teachers with coaching and professional development to support the implementation of specific curriculum materials was associated with greater gains in teacher instructional behaviors. In a recent review, however, Leonard et al. (in preparation) identified only three group design studies that used coaching to support teachers implement specific Tier 1 reading interventions in elementary school (McMaster et al., 2013; Nelson-Walker et al., 2013; Stein et al., 2008) and these studies reported mixed results. Nelson and colleagues (2013) examined implementation of ECRI. Teachers received five 8-hour days of professional development as well as monthly
coaching sessions delivered after classroom observations. All professional development was delivered by an ECRI expert coach. A significant treatment effect was detected of coaching on fidelity and quality of implementation of ECRI.

However, both Stein et al. (2008) and McMaster et al. (2013) did not find effects of coaching on implementation of reading programs or interventions. Stein et al. (2008) investigated four conditions: (a) “control” that was not implementing K-PALS, (b) “workshop” that participated in an initial ½ day workshop that includes K-PALS training, (c) “booster” that received the initial workshop plus two booster sessions that focused on review of K-PALS procedures and discuss implementation issues, and (d) “helper” that received the workshop, two booster sessions, plus weekly coaching (i.e., consultation and technical visits by graduate student coaches). There were no statistically significant differences between the “booster” condition and “helper” condition in fidelity of implementation, and therefore the addition of coaching did not improve the fidelity of implementation. McMaster and colleagues (2013) used the control condition form Stein et al. (2008) and created two “booster” conditions that differed in coach characteristics (i.e., internal versus external coaches). There were no statistically significant differences in fidelity of implementation of K-PALS between the conditions that received support from internal or external coaches.

There are also few single case studies that have examined whether coaching can improve the quality of reading instruction in whole-class Tier 1 settings. In one of the few studies, Cuticelli et al. (2017) used a single case multiple-baseline design to investigate whether specific feedback and praise would increase teachers’ use of OTRs during Tier 1 instruction. Data collectors measured the frequency of OTRs delivered by classroom teachers during the 30-minute whole group reading instruction of a research-based Tier 1 program. After the classroom
observation, data collectors provided both graphic and performance feedback to the teacher. Findings indicate that providing teachers with performance feedback increased their use of OTRs during whole group instruction.

In summary, few studies have evaluated the effects of coaching on the fidelity and quality of implementation of specific whole-class Tier 1 reading interventions or programs, and the existing studies report mixed findings. The current study adds to this limited research by providing evidence from a single case multiple baseline design study that evaluated the effects of coaching on the quality of implementation of whole-class implementation of Fundations. Results suggest that ongoing coaching can improve the quality of instruction during whole-class Tier 1 reading instruction, particularly when it focuses on helping teachers implement a specific program, provides enhanced lesson plans, graphic and verbal feedback, and targets important instructional behaviors.

Limitations and Directions for Future Research

Lack of Experimental Control

The coaching intervention was implemented with both teacher participants in the same order (i.e., modeling, opportunities to respond, academic feedback). It was evident through visual analysis that the modeling intervention had an impact on opportunities to respond. For both teachers once the coaching intervention was implemented, there was a significant decrease in individual responses. Further the coaching intervention also impacted group responses for teacher participant two. Therefore, it was apparent that these behaviors were not independent. The study may have produced more interpretable data and demonstrated greater experimental
control if the target instructional behaviors had been introduced in a different sequence to each of the participants in order.

**Participants**

The primary investigator used an established relationship with a school to recruit teachers for this study. The level of Fundations implementation in the school was not known to the primary investigator prior to the start of the study. Therefore, it was unknown if the teachers were implementing Fundations with high levels of fidelity and incorporating target instructional behaviors, or whether they were in need of support. For example, unlike teacher participant two, teacher participant one demonstrated relatively high levels of fidelity and was already incorporating some target instructional behaviors into her instruction. This potentially reduced the power of the coaching intervention to change her instruction. For example, during baseline observations, it was evident that teacher participant one had clear classroom expectations and maintained student engagement. She was also displaying high rates of academic feedback. It is possible that there were only two effects because this teacher did not necessarily need coaching in academic feedback. If there was another teacher in need of coaching, it is possible that there may have been a higher rate of improvement or more effects.

**External Coach**

The school did not have a literacy coach and therefore the primary investigator acted as the coach for the study. This coaching model had not been evaluated and having the primary investigator serve as the coach ensured fidelity to the coaching intervention. Future research should evaluate whether this coaching intervention is both feasible and effective when
implemented by internal coaches. Ideally, the intervention should build internal coaching capacity within the school.

In addition, it is not possible to separate the effects due to the coaching intervention from the possible effects due to the coach. The coach was an experienced literacy coach and had five years of experience. Future research should examine the effectiveness of this coaching intervention with coaches who have different experience and styles.

**Student Outcomes**

Student reading outcomes were not collected. The purpose of an effective coaching model is to change teacher behavior which would in turn directly impact student achievement. The focus of this study was to improve teacher instructional behavior which is a critical first step before evaluating effects on student outcomes. Future research should consider evaluating the effectiveness of the coaching intervention on student reading outcomes.

**Implications for Practice**

This study extends the research on Tier 1 instruction (e.g., Baker et al., 2010; Cuticelli et al., 2016) and suggests that coaching focusing on target instructional behaviors can increase the quality of instruction during whole class reading instruction. Data from this study suggest that even when teachers are implementing a specific reading program with fidelity, they may not be incorporating principles of effective instruction. In the present study, the coach developed enhanced lesson plans, aligned with Fundations activities, that provided guidance on incorporating target instructional behaviors. It may be beneficial for literacy coaches to review reading programs or interventions to identify activities, or parts of activities, where effective instructional behaviors can be implemented.
One to one coaching can be effective if is specific to teacher’s instructional needs. This study found effects in areas where teacher participants were not implementing the target instructional behaviors (i.e., modeling, opportunities to respond, and academic feedback) consistently during reading instruction. However, this study found that coaching was only impactful for instructional behaviors for which teachers demonstrated low rates of implementation during baseline. Therefore, it may be beneficial for literacy coaches to collect baseline data to identify areas where coaching may be most valuable.

**Implications for Teacher Preparation**

Evidence-based interventions can provide teachers with a scope and sequence that details what and when they need to teach critical early literacy skills. However, it is true that even with scripted interventions and programs, if teachers follow programs with fidelity, principles of effective instruction may not be embedded. Teachers may need to make adaptations to programs to intensify interventions (Fuchs et al., 2017). Therefore, teacher preparation programs should consider including principles of effective instruction to teach preservice teachers how to make adaptations to reading programs and interventions to intensify and improve the overall quality of instruction.

**Conclusions**

There are a large numbers of children that are reading below grade level and are at risk for future reading difficulties (e.g., NAEP, 2019). Teaching reading is complex and teachers may not be well-prepared or have the knowledge to teach reading well. However, there is limited research that identifies how to best support teachers improve the quality of their instruction (Clark et al., 2016). Coaching that is ongoing can improve the quality of instruction...
when it is combined with professional development (e.g., Teemant et al., 2011). This study extends the research on literacy coaching by demonstrating the effectiveness of a coaching intervention designed to increase teachers’ rate of important instructional behaviors (i.e., modeling, opportunities to respond, and academic feedback) while implementing a specific Tier 1 reading program. Moreover, this study found that coaching was effective specifically for instructional behaviors for which teachers demonstrated low rates of implementation during baseline.
References


McCutchten, D., Abbott, R.D., Green, L. B., S. Natasha Beretvas, S. N., Cox, S., Potter, N.S.,


# Appendix A

## COSTI Observation Protocol

### Fundations

#### COSTI-Reading

<table>
<thead>
<tr>
<th>Date</th>
<th>Observer Initials</th>
<th>Observation Occasion</th>
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<tr>
<td>/ /</td>
<td></td>
<td>IOA</td>
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<th>Classroom ID</th>
<th>Teacher ID</th>
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<table>
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<th>Lesson #</th>
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<th># of Students</th>
<th>Whole Class</th>
<th>Small Group Group</th>
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<th>End Time</th>
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</table>

Comments
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<tr>
<th>Start Time:</th>
<th>Stop Time:</th>
</tr>
</thead>
<tbody>
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<td></td>
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</tbody>
</table>

### Content (choose one):
- Drill/Sounds/Warm-Up
- Introduce New Concepts
- Trick Words
- Word of the Day
- Word Talk
- Storytime
- Echo/Find Words
- Make it Fun
- Dictation
- Other

### Notes:

---

**Obs ID:** [ ]
Appendix B
COSTI Training PowerPoint

COSTI-Reading Observation Training

October 18, 2019

Agenda

- Introductions
- Overview of Dissertation Study
- Research on the COSTI
- COSTI Observation System
- Coding Practice
Comprehensive Exam

Systematic review focused on:

- the effectiveness of coaching on changes in teacher instructional behavior and improving reading instruction at the elementary school level
Comprehensive Exam

Limitations of Current Research:

- 3 of 17 studies focused on implementing a specific intervention with fidelity and studies found mixed reviews.
- 1 of the 17 studies focused on the frequency of teachers’ instructional behaviors and found mixed results.

Based on a review of the current literature on literacy coaching, there is a need for more research on the effects of literacy coaching that is context specific (i.e., focused on a specific reading program) and that focuses on increasing teachers’ specific instructional skills.
Research Questions

- Purpose: to examine the effects of providing teachers with a coaching model to increase teacher quality. Specifically, I attempt to answer one research question:

Does coaching increase teachers’ use of modeling, opportunities to respond, and specific feedback above and beyond one stand-alone training?

Method

Measures of instructional behaviors

- The Classroom Observations of Student-Teacher Interactions (COSTI: Doabler, Baker, Kosty, Clarke, Miller, & Fien, 2015; Smolkowski & Gunn, 2012)

- Documents four teacher instructional behaviors:
  - teacher models
  - student practice opportunities (individual and group)
  - student errors
  - teacher feedback (i.e., reinforcing correct responses, and correcting incorrect responses)
Fundations

- A systematic phonics program that can be implemented in Tier 1 or whole class instruction for 30 minutes per day and/or in Tier 2, for students who are presenting difficulties in reading, for 30 minutes three to five times per week.
- It can be implemented in grades kindergarten through third grade and is designed around a five-day school week.
- Specific skills that are taught in Fundations include: phonological awareness, letter sounds, alphabetic principle, letter formation, vocabulary, high frequency words, fluency, and comprehension.
Fundations Daily Lesson

- 30 minutes
- 2-5 learning activities that are rotated daily
- Activities address the essential skills in an integrated approach
- Activities provide lot of repetition

Let’s Take a Look!

Unit 8, Week 1, Day 1
Day 1

Drill Sounds/Word Up

Standard Sound Cards

Verbal or visual stimuli can be the drill leader. Say the sounds of the words and elicit words and word families. Use a visual stimulus such as a sound chart or a word family chart. Explain that these words are related to the sounds.

R-Controlled Sounds

T-Chart: "Put the sound in the R-Controlled position."

Introduce New Concepts

TEACH R-CONTROLLED SYLLABLES

Say, "Put the sound in the R-Controlled position."

Student Materials

Cut word cards with Mega. Max

Using the Standard Sound Cards, build the words out of the word cards.

Day 1

TEACH R-CONTROLLED SYLLABLES

Say, "Put the sound in the R-Controlled position."

Student Notebook

Use the Student Notebook to reinforce the concepts taught in class.

Explain that if a word is a compound word, the syllables are not equal. For example, "next year" is a compound word, but the syllables are not equal.

Drill Word (Word Family)

Say, "Put the sound in the R-Controlled position."

Student Notebook

Use the Student Notebook to reinforce the concepts taught in class.

Explain that if a word is a compound word, the syllables are not equal. For example, "next year" is a compound word, but the syllables are not equal.

Drill Word (Word Family)

Say, "Put the sound in the R-Controlled position."

Student Notebook

Use the Student Notebook to reinforce the concepts taught in class.
RESEARCH ON THE COSTI

(Expert on the COSTI provided background and research)

COSTI-READING
**Purpose of the Classroom Observations of Students - Teachers Interactions - R**

- To systematically measure the instructional interactions that occur between teachers and students around critical reading content.

---

**Instructional Interactions**

- *Instructional interactions represent opportunities for students to interact with critical reading content.*

- *Such interactions take place between students and teachers, and among students*
**COSTI-R Cover Sheet**

- **Start/End times** (must match activity times on ½ sheets)
- Observer initials
- IDs
  - School
  - Classroom
  - Teacher
- # of Students
- Date / Observation Occasion
- Lesson # – Unit 3 Week 1 Day 4 = 314
- Group format: whole class, small group
- IOA: inter-observer agreement

---

**Cover Sheet**

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<table>
<thead>
<tr>
<th>Date</th>
<th>Observer Initials</th>
<th>Observation Occasion</th>
</tr>
</thead>
<tbody>
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<tr>
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<td></td>
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</tbody>
</table>

**Fundations**

- COSTI-Reading

Avoid using teacher names
```
COSTI-R: Half-sheet Components

- Start and Stop times – per activity
- Content Area Codes: examples
  - Fundations – activities
## CONTENT CODES

### Context Codes

![Context Codes Table]
Context Codes

- Start and Stop Time
- Type of Content

Start and Stop Times

60 codes per ½ sheet
Start and Stop Times (cont’d)

- Continuing coding on a ½ sheet until it’s fully completed (60 coded bubbles).
  - After the 60th code, record the stop time on the current ½ sheet
  - On the next ½ sheet, record start time and continue coding instructional interactions

Stop/Start Times

Stop time of top half-sheet should mirror start time of bottom half-sheet
Time is continuous!

Avoid time gaps between half sheets!
“Other” Content

- Consider other content are activities unrelated to reading (more than 2 minutes)
- Examples:
  - Material distribution (lengthy ones)
  - Play time, Show and Tell
  - Visitors or guest speakers
  - Classroom time-outs, major behavior interruptions

Coding “Other” Content

When instruction transitions to a non-reading activity, complete the steps below:
- Note stop time of previous reading activity
- Complete context codes for non-reading activity
- Observe, but DO NOT code instructional interactions
- Begin coding if instruction transitions back to reading
Transitions Between Targeted Content and Unrelated Content:

- If a teacher provides continuous reading instruction and does not transition to an unrelated reading activity, simply continuing coding on a ½ sheet until it's fully completed (60 coded bubbles).
  - After the 60th code, record the stop time
  - On the next ½ sheet, record start time and continue coding instructional interactions

- However, if a teacher transitions to a non-reading activity:
  1. Record stop time for reading activity
  2. Indicate “Other” as the content code
  3. On the next ½ sheet, record start time for “Other” content code (non-reading) but do not code instructional interactions (bubble codes)
### Instructional Interaction Codes

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Model</td>
<td>Group Responses</td>
</tr>
<tr>
<td>Academic Feedback</td>
<td>Individual Responses</td>
</tr>
<tr>
<td></td>
<td>Student Error</td>
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</table>

### TEACHER BEHAVIORS
Teacher Model

- An explicit, overt, and unambiguous explanation, communication, or physical demonstration of reading content.
- **Teacher models are discrete teaching behaviors.**
- Teachers can model (a) definitions, (b) step-by-step procedures, (c) strategies / explanations, (d) facts.
- Teacher models can occur throughout lessons (e.g., during introduction of new material, review, guided practice, independent practice
- Think-a-louds are also considered teacher models
- A teacher model is not the same thing as a prompt to do something

**Indicators of an Upcoming Teacher Model:** Phrases to listen for during instruction

- “Watch me”
- “My Turn”
- “Watch as I”
- “This is...”
Examples-Teacher Model

- The teacher states, “This word is responsibility. When you have responsibility, there are things you are expected to do.”

- The teacher points to a syllable and says: “We know this is a closed syllable because the vowel is followed by a consonant, making the vowel say its short sound.”

- The teacher says: “The word is cat. Watch me tap this word: c-a-t Cat.” (Teacher taps each sound with a finger, then puts all fingers to their thumb to say the whole word.)

- The teacher holds up a card and states, “This is the word have, it is a trick word, have h-a-v-e have.” (Teacher touches the word, spells the word, and reads it)

- When reading a story aloud, the teacher stops to demonstrate how to make a prediction. “I predict that next in the story the boy will climb the tree to get his cat.”

Non Examples-Teacher Model

- The teacher asks, “Everyone, how many sounds does the word bat have?”

- The teacher says, “Let’s all say the word have.” The students read the word, but the teacher doesn’t.

- The teacher asks a small group of students read words on a chart.
**Teacher Model: Video Example**

![Image of a teacher reading a document](image)

---

**Academic Feedback**

- Academic feedback is an teacher’s verbal reply, physical demonstration, or written response that is specific to and directed toward a preceding student(s) response.
- Academic feedback can follow group and individual responses.
- It can consist of a teacher correcting a student mistake or affirming a correct student response.
- Academic feedback can sometimes be delayed, particularly during independent practice opportunities.
- Observers should *not* code simple indications of correctness (e.g., head nods and one-word responses, such as “yes”) as academic feedback.
Types of Academic Feedback

Two types of Academic Feedback

- Error Correction
- Response Affirmation

Academic Feedback: Error Correction

- Error correction (i.e., corrective feedback) is a teacher’s response to a group or individual mistake
  - Can be...
  - Correcting (e.g., “That sound is...”)
  - Re-teaching a missed skill (e.g., “Listen as I read the words.”)
  - Redirecting a group / individual response (e.g., “Remember to say all of the sounds in the word.”)
Examples - Error Correction

- The group incorrectly says the wrong vowel sound. The teacher responds, “Let’s try that again. Remember, the vowel sound is /ɔɪ/.”
- Billy misidentifies a word. The teacher re-teaches the word by stating, “The sounds in word are /tʃ/ /r/ /iː/ /k/. The word is trick.”
- A small group has made consecutive mistakes with reading 2-letter blends in words. To prevent another error, the teacher redirects the group by stating, “Don’t forget to look at both letters [teacher points to the first and second letter in the blend].”

Non-Examples: Error Corrections

- The group identifies letter-sound correspondences from a chart. Two students say the incorrect sound. The teacher responds, “Nice job!”
- The group identifies letter-sound correspondences from a chart. Two students say the incorrect sound. The teacher responds, “No, say the sound again.”
- The group identifies letter-sound correspondences from a chart. Two students say the incorrect sound. The teacher shakes her head no and then transitions to a different activity.
- The group identifies letter-sound correspondences from a chart. The teacher transitions to a different activity and then responds, “Tomorrow, we need to be more careful with saying the sounds that letters make.”
**Academic Feedback: Response Affirmation**

- Response Affirmations confirm student correctness and/or add further support to a correct group or individual response.
  - Response affirmations must be explicit (not simply, “Yes!”)
  - Academic feedback (in the form of a response affirmation) occurs each time a discrete response is reinforced.
  - Often take the shape of restating a correct student response.
  - Remember: It is sometimes difficult to discern between academic feedback and a teacher model. *Err on the side of coding one of the two.*

**Academic Feedback: Response Affirmation Examples**

- Students correctly read the word *trick* and the teacher responds. “That’s right, that word is trick.”

- The group correctly names five different vowel combinations. After each vowel combination, the teacher responds, “*Yes, /oi/.*” “*Yes, /ea/.*” “*Yes, /aw/.*”
  - Code academic feedback for each response affirmation.

- After the class reads the list of sight words, the teacher rereads the list of words.

- If the teacher prompts students to provide more information or details regarding a story they just read (e.g., “*Yes, Yogi was the main character. What else do you remember about what you read?*”)
Non-Examples-
Response Affirmation

■ The group correctly reads a list of sight words. The teacher shakes her head yes and then transitions to a different activity.

■ Sammy correctly identifies several letter sounds. The teacher gives Sammy a thumbs-up.

——

Academic Feedback: Video Example
Academic Feedback: Video Non-Example

STUDENT BEHAVIORS
Student Behaviors

Two forms of student behaviors:
- Individual responses
- Group responses

Group and Individual Responses

Group Response Opportunity

Individual Response Opportunities
Group Response

A response from two or more students.
Group responses can be:
- verbal responses or explanations

DO NOT CODE:
- physical demonstrations
- written answers

Group Response: Examples

- The teacher or instructional assistant asks, “Everyone, what letter is this?” All students respond.
- The teacher asks, “How many sounds are in the word trip?” Three of the 20 students respond.
- The students and teacher are practicing the alphabet by singing the alphabet song. More than one student is singing (code as 1 group response for whole song).
- The teacher says, “Isabel, tell me the sounds in the word cup.” Isabel gives the first sound and another student chimes in as she gives the other two sounds.
- The whole class reads a word list (code 1 group response for each word read).
Group Response: Non-examples

- The teacher asks, “Everyone, how many sounds are in the word trip?” One of the 20 students responds
  - Code as individual response
- The teacher asks, “Billy, can you tell me where the story takes place?” Billy responds.
  - Code as individual response

Coding Group Responses

- Code group responses only when...
  - Preceded by a teacher-posed question and/or request,
  - Small-group or whole class answers are produced in unison * (see next slide),
  - Responses are supplied within a reasonable time period (i.e., within several seconds).
Coding Group Responses

- Group responses that aren’t in perfect unison [e.g., two students respond, however, their answer is immediately followed (i.e., within 3 seconds) by the response of another student or other students]
  - Code ONLY ONE Group Response code
    - Delayed-unison responses must be within 3-seconds from the original answer
  - If the delayed-unison response is incorrect, code a Student Mistake after the Group Response code.
    - Do not code a student mistake after the 3-second window (responses outside the 3 second window are considered call-outs)

Group Response: Video Example
Group Response: Video Example

Ms. Ish
3rd/4th Grade Special Education

Group Response: Video Example

Trick Word Routine
**Individual Response**

- Individual Responses can be
  - Verbal responses or explanations
  - Physical demonstrations
  - Written answers if visible to entire class

- Individual Responses can be obtained via
  - A request to a specific student identified by the teacher
    - “Johnny, what letter?”
  - Questions posed to the group at large
    - “Who can tell me what word this is?”
    - “Everyone, which sound does this letter make?”

**Individual Response: Examples**

- The teacher asks, “Johnny, can you tell me what sound this is?? Johnny responds “/d/.”

- The teacher asks, “Who can tell me how many sounds are in the word *raft*?” Kate responds, “Four.”

- The teacher specifically asks a question to one student, however, a different student blurts out the answer (and the teacher confirms the answer).

- Following a teacher request, Sally reads the word *playful* on the board.
**Individual Response: Non-examples**

- The teacher asks, “Everyone, tell me the sounds in *break*.”
  The whole class responds.
  - Code as a *group response*
- The teacher asks Betty to read the words on the board, but four students help with the answer.
  - Code as a *group response*

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**Coding Individual Responses**

- Code an *individual response* when...
  - A single student *produces an answer*
  - The answer is *preceded by a teacher-posed question and/or request,*
  - A student’s *answer immediately follows a question and/or request,*
  - An individual student responds other than the one identified by the teacher and is *clearly acknowledged by the teacher*
Coding Individual Responses

- Request for an individual response with no response...
  - Teacher calls on a particular student, but the student does not respond. The teacher then provides academic feedback in the form of the answer.
    - Code Academic Feedback
  - Teacher calls on a particular student and the student does not respond. The teacher then poses the question to a different student, who responds.
    - Code Individual Response

- Code what you hear!

Coding Piggyback Responses

- Piggyback responses: An individual responds, however, his/her answer is immediately followed (i.e., within 3 seconds) by the response of another student or other students
  1. Change original Individual Response code to a Group Response code
  2. Piggyback response must be produced within 3 seconds from the original answer
  3. If the piggyback response is incorrect, code a Student Mistake after the new Group Response code.
  4. Do not code a student mistake after 3 seconds
Callouts

- Callouts often occur when a teacher...
  - *Specifically identifies an individual student for a turn, but another student calls out an answer.*
  - States that **he/she will only call upon students who are raising their hands, but one student calls out the answer.**
- If another student calls out...
  - **Code as an individual response (or group response) if the callout is acknowledged by the teacher.**
  - **If the teacher ignores the callout - Do Not Code**
  - **If a callout is not preceded by teacher question - Do not code**

Callout Examples

- Follow the teacher's lead when coding. For instance...
  - The teacher asks Johnny to identify a letter, but Sally calls out the answer. The teacher responds, “Nice work!”
    - **Code as individual response**
  - The teacher asks Johnny to read a word, but Sally and Bob call out the answer. The teacher responds, “Nice work you two!”
    - **Code as group response**
  - The teacher tells the group that she will only call upon someone who raises his/her hand. Sally calls out the answer. The teacher waits and selects Johnny (raising his hand), to answer.
    - **Code nothing for Sally, code IR for Johnny**
  - Billy calls out before Jim gets to answer the question, but the teacher ignores the callout and restates the question.
    - **No Code**
Individual Response: Video Example

Student Mistake

- Student errors can involve non-covert...
  - Verbal mistakes
    - GROUP & INDIVIDUAL
  - Physical mistakes
    - INDIVIDUAL ONLY
  - Written mistakes
    - INDIVIDUAL ONLY
    - Code an incorrect written response from an individual only when the error occurs during a class demonstration and all students can see the response
Coding Student Mistakes

- Code a student mistake...
  - When a group of students or an individual makes an error during overt group or individual responses,
  - If during a group response, one or more students clearly make an error.
  - Mistakes must follow either an individual or group response code
    - Do not code errors made in random callouts not responded to by the teacher

Student Mistakes: Examples

- Code a student mistake when...
  - The teacher asks, “Everyone, what sound?” One student answers incorrectly, while the remaining students correctly answer “/o/.”
  - The teacher asks Sally to read the word on the board. Sally responds, “Where, I mean were.” The answer is where.
  - The teacher asks a student to write the letter b on the board. The student writes the letter d.
Student Mistakes: Non-examples

- Coding a student mistake if...
  - During a worksheet activity (covert response), you see a student making mistakes
  - During a partner reading activity, it appears a student is reading the words incorrectly but it cannot be confirmed

Self-Corrections

- Do not code a self-correction as an error
- Self-corrections must be made within 3 seconds of the initial response
- Self-Correction example:
  - The teacher asks Sally to read a word on the board. Sally responds, “Shop, no ship.” “Yes, it’s ship.” The answer is ship.
  - Code one individual response; No code for Sally’s self-correction
Student Mistakes: Video Example

General Response Guidelines

- Number of codes depends on teacher behavior and requests/prompts
  - “I want you to write the letters a and b”
    - Code 1 covert response
  - “I want you to write the letter n.” “Now I want you to write the letter m.”
    - Code 2 consecutive covert responses
  - “I want everyone to say the letter sounds quietly and then tell your partner the word.”
    - Code 1 covert response
  - “I want everyone to read this word to themselves. Nice Job. What’s the word? Nice work.”
    - Code 1 covert response and 1 group response (no academic feedback or modeling)
Content Codes

- Drill Sounds/Warm-Up
- Introduce New Concepts*
- Trick Words
- Word of the Day
- Word Talk
- Echo/Find Words (single Syllable Words Video)
- Dictation (Single Syllable Words Video)
- Make It Fun*
- Storytime*

*Variable activities do not have a standard procedure
Content Codes

- Drill Sounds/Warm-Up
- Introduce New Concepts *
- Trick Words
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- Echo/Find Words (single Syllable Words Video)
- Dictation (Single Syllable Words Video)
- Make It Fun *
- Storytime *

*Variable activities do not have a standard procedure

Interaction Codes

- Teacher Model (M)
- Group Response (GR)
- Individual Response (IR)
- Student Mistake (E)
- Academic Feedback (F)
General Observation Procedures

- Observation Etiquette:
  - Check in with the office and the teacher
  - Enter and exit classrooms quietly
  - Observe from an unobtrusive place
  - Try to identify unit, week, and day of lesson number from materials if not posted on board, or other sources:
    - Facing Calendar

General Observation Procedures

- Observation Etiquette:
  - Dress professionally
  - Do not talk to teachers about ANY aspect of your observation

  - Always use professional judgment
    - Remember... We’re guests in classrooms and representing UConn
POST OBSERVATION

Verifying- Obsv. Forms

- **Start / Stop times must be continuous**
  - e.g., Activity 1 (9:00 – 9:15); Activity 2 (9:15 – 9:30)

  **Avoid**
  - Gaps in time between ½ sheets
  - Missing content codes
  - Double codes (content codes for an activity)

*Pencil in Bubbles - double check!*
  - Double bubble
  - Pencil tone
Avoid the Double Bubble
Questions?
Appendix C
Teacher Consent Form

Teacher Consent Form for Participation in a Research Study

Principal Investigator: Michael D. Coyne, Ph.D.

Student Investigator: Kaitlin M. Leonard, M.Ed

Study Title: The Effects of Literacy Coaching on Teacher Instructional Behavior and Fidelity to Tier 1 Reading Instruction

Introduction

You are invited to participate in a research study being conducted by Dr. Michael Coyne and Kaitlin Leonard, researchers from the University of Connecticut. The information in this form is provided to help you decide whether or not to take part. If you decide to take part in the study, you will be asked to sign this consent form. If you decide you do not want to participate, there will be no penalty to you, and you will not lose any benefits you normally would have.

Why is this study being done?

The purpose of this research project is to implement a coaching model that will assist teachers in the implementation of a Tier 1 reading program. Up to four teachers will be asked to participate. In this study we will provide professional development, ongoing support that will involve observations, and provide feedback to teachers. You were selected to be a possible participant because your school district has agreed to be a part of this study.

What are the study procedures? What will I be asked to do?
If you agree to be in this study, we will ask you to:

- Participate in one professional development session held at an agreed upon time during the school day.
- Be observed during the entire Fundations Tier 1 reading lesson daily for 30-45 days.
- Participate in a post-intervention feedback sessions two times per week for approximately 4-6 weeks. These feedback sessions should occur within 24 hours of the classroom observation and will be scheduled at a time the teacher chooses (e.g., before school, common planning time, after school).
- Be video recorded two times per week during the post-observation conference in your classroom.

What are the risks or inconveniences of the study?

The risks associated with this study are minimal, and are not greater than risks ordinarily encountered in daily life.

What are the benefits of the study?

The possible benefits of participation are:

- you will participate in a coaching model that will include explicit, specific, non-evaluative feedback that will improve your practice
- you will learn evidence-based practices or strategies that will enhance your students’ engagement during Fundations
- evidence-based practices could increase student achievement scores in reading
- you will continue to use Fundations, but develop your practice!!!

Will I receive payment for participation? Are there costs to participate?

Aside from your time, there are no costs for taking part in the study. We will pay you $500 for participation. If you withdraw from the study, you will not be compensated for any work completed up until the point of withdrawal.

How will my personal information be protected?
The records of this study will be kept private. No identifiers linking you to this study will be included in any professional presentations or publications. If the study is published, a pseudonym will be used to protect your identification. Research records will be stored securely and only research personnel at the University of Connecticut will have access to the records.

Consent forms will be stored in a locked file cabinet at the University of Connecticut. Video recording will be stored on a password protected laptop and uploaded to a protected shared drive within 24 hours. Researchers will be retaining video recordings indefinitely. In addition, all data entry and coaching materials will be stored on a password protected laptop. We will do our best to protect the confidentiality of the information we gather from you but we cannot guarantee 100% confidentiality.

You should also know that the UConn Institutional Review Board (IRB) and Research Compliance Services may inspect study records as part of its auditing program, but these reviews will only focus on the researchers and not on your responses or involvement. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

**Can I stop being in the study and what are my rights?**

You do not have to be in this study if you do not want to. If you agree to be in the study, but later change your mind, you may drop out at any time. There are no penalties or consequences of any kind if you decide that you do not want to participate.

**Whom do I contact if I have questions about the study?**

We will be happy to answer any questions you have about this study. If you have further questions about this study or if you have a research-related problem, you may contact student researcher, Kaitlin Leonard at 508-320-6563 or the principal investigator, Dr. Michael Coyne at 860-486-5799. If you have any questions concerning your rights as a research subject, you may contact the University of Connecticut Institutional Review Board (IRB) at 860-486-8802.

**Documentation of Consent:**

I have read this form and decided that I will participate in the project described above. Its general purposes, the particulars of involvement and possible hazards and inconveniences have
been explained to my satisfaction. I understand that I can withdraw at any time. My signature also indicates that I have received a copy of this consent form.

____________________  ______________________  ________
Participant Signature:  Print Name:  Date:

____________________  ______________________  ________
Signature of Person  Print Name:  Date:

Obtaining Consent
Appendix D

Photo Release Form

Protocol # H19-160  Principal Investigator: Michael Coyne; Kaitlin Leonard, student researcher

Protocol Title: The Effects of Literacy Coaching on Teacher Instructional Behavior and Fidelity to Tier 1 Reading Instruction

As part of this research study the University of Connecticut and those acting pursuant to its authority (“UCONN”) may record your likeness and/or voice on a particular medium (“recordings”) including but not limited to video, audio, photographic, digital, and electronic mediums during your participation in this research study. Please indicate what uses of these recordings you are willing to permit, by putting your initials next to the uses you agree to and signing the form at the end. The choice is completely up to you. We will only use recordings in the ways that you agree to. In any recording, you will not be identified by name. The photo/videos will not be used for commercial purposes.

1. ________ The recordings can be studied by the research team for use in the research project
2. ________ The recordings can be used for scientific publications
3. ________ The recordings can be used for scientific conferences or meetings
4. ________ The recordings can be used for educational purposes
5. ________ The recordings can be used for public presentations to non-scientific groups
6. ________ The recordings can be used on television or the audio portion can be used on radio
7. ________ The recordings can be posted to a UCONN website
8. ________ The recordings can be used for reports/presentations to any research funding agencies

I understand that all such recordings, in whatever medium, shall remain the property of UCONN. My name will not be used in any publication. I agree that I will not be compensated for the use of the recordings.
I have read the above descriptions and give my consent for the use of the recordings as indicated by my initials above. (Youth under 18 years of age must have a parent/legal guardian signature.)

__________________________________________________________

(Name, please print)

__________________________________________________________  ________________

(Signature of Subject)  (Date : MM/DD/YY)

__________________________________________________________

(Parent/Guardian Signature, if participant is a minor) (Date : MM/DD/YY)

__________________________________________________________

(Signature of Person Obtaining Consent)  (Date : MM/DD/YY)
Appendix E

Parental Notification Form

Parental Notification Form Regarding Participation in a Research Study

University of Connecticut

Principal Investigator: Michael Coyne

Student Researcher: Kaitlin Leonard

Study Title: The Effects of Literacy Coaching on Teacher Instructional Behavior and Fidelity to Tier 1 Reading Instruction

Overview of Research

You are being asked to provide consent for your child to participate in a research study being conducted by Dr. Michael Coyne and Kaitlin Leonard, researchers from the University of Connecticut. Participation is voluntary. The information in this form is provided to help you decide whether or not you want your child to take part. If you decide you want your child to take part in the study, you do not have to do anything. If you decide you DO NOT want your child to participate, please sign the form below and return it to your child’s teacher by (specify date once IRB is approved). There are no penalties or consequences of any kind if you decide that you do not want your child to participate. You should know that regardless of your decision, your child will remain in his/her classroom with the same teacher.

This research is being done to better understand if a reading coach can assist teachers increase their delivery of instruction. The reading coach, who will be the student investigator, will assist your child’s teacher in implementing the current reading program, Fundations, in a way that will potentially increase your child’s reading skills. The research project will last approximately 30-45 days and observations will be conducted daily during the Fundations 30-minute reading block.

A more detailed description of this research follows.

Introduction/Why is this study being done?

Researchers from the University of Connecticut are conducting a research study at your child’s school. This form will give you the information you will need to understand why this study is being done and what
you need to do if you DO NOT want your child to participate. We encourage you to take some time to read about the study and to discuss it with your child. We also encourage you to ask questions now and at any time. If you decide to allow your child to participate, no further action is required. Your child will automatically be enrolled in the study. However, if you decide that you DO NOT want your child to participate or if you decide later that you would rather not have your child’s data be used in the study, please sign the attached form and return it to your child’s teacher by (insert date).

The purpose of this research project is to assist your child’s teacher to implement the current reading program, Fundations. Your child’s teacher received training on this program. The student investigator will coach your child’s teacher to implement the program using evidence-based practices that will potentially benefit your child’s reading ability. Your child’s teacher was selected to be a participant because your school district has agreed to be a part of this study.

**What are the study procedures? What will my child be asked to do?**

Your child will not be asked to do anything beyond the regular requirements of reading expectations in his/her classroom. Your child’s teacher will be observed daily. Please know that the focus of the study is on the teacher, not individual students.

**If you DO NOT want your child to participate, what will he/she do instead?**

Your child will continue to receive reading instruction in his/her classroom.

**What are the risks or inconveniences of the study?**

We believe there are no known risks to your child because of his/her participation in the research study; however, a possible inconvenience may be the time it takes to complete the study.

**What are the benefits of the study?**

Your child may not directly benefit from this research; however, we hope that your child’s participation in the study may increase his/her reading skills.
How will my child’s information be protected?

We will not be collecting any data on your child. Your child’s information, including his/her name, will not be released to us. As stated previously, please know that the focus of the study is on the teacher, not individual students. We will do our best to protect the confidentiality of the information we gather from the classroom but we cannot guarantee 100% confidentiality.

You should also know that the UConn Institutional Review Board (IRB) and Research Compliance Services may inspect study records as part of its auditing program, but these reviews will only focus on the researchers and not on your child’s responses or involvement. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

Can my child stop being in the study and what are my and my child’s rights?

Your child does not have to be in this study if you do not want him/her to participate. If you decide to allow your child to be in the study, but later change your mind, you may withdraw your child at any time. There are no penalties or consequences of any kind if you decide that you DO NOT want your child to participate. Your child will continue to have the same teacher and will participate in classroom activities.

Whom do I contact if I have questions about the study?

We will be happy to answer any question you have about this study. If you have further questions about this project or if you have a research-related problem, you may contact the principal investigator, Dr. Michael Coyne at 860-486-5799 or the student researcher Kaitlin Leonard at 508-320-6563. If you have any questions concerning your child’s rights as a research participant, you may contact the University of Connecticut Institutional Review Board (IRB) at 860-486-8802.
Parental Notification Form Regarding Participation in a Research Study

University of Connecticut

Principal Investigator: Michael D. Coyne, Ph.D.

Student Researcher: Kaitlin M. Leonard, M.Ed

Study Title: The Effects of Literacy Coaching on Teacher Instructional Behavior and Fidelity to Tier 1 Reading Instruction

Notification of Refusal:
I have read this form and decided that I DO NOT give permission for my child to participate in the study described above. My signature also indicates that I have received a copy of this parental notification form. Please return this form to the child’s teacher by November 8th.

____________________
Print Child’s Name:

____________________  ______________________  ____________
Parent/Guardian’s Signature:  Print Name:  Date:

Relationship (e.g. mother, father, guardian):______________________________
Appendix F
Teacher Participant Training PowerPoint

PRINCIPLES OF EFFECTIVE INSTRUCTION

Kaitlin Leonard, M. Ed
University of Connecticut

OBJECTIVES

- Provide you with background on good instructional behaviors
- Learn the definitions of instructional behaviors:
  - Modeling
  - Academic Feedback
  - Opportunities to Respond
WHAT DO WE KNOW ABOUT THE IMPORTANCE OF TEACHING READING WELL?

- Learning to read well is essential for success in school and later in life (Snow, 2002).
- Although early reading success is predictive of positive academic outcomes, it is also true that children who struggle in reading may encounter long-term negative effects (McMaster et al., 2014; Snow, 2002).
- In 2019, The National Assessment of Educational Progress (NAEP) reported that only 35% of fourth graders were at or above the proficient level in reading, indicating that a substantial number of students in the United States are reading below grade level and therefore at risk for future academic difficulties (RIF, 2019).

WHAT TO TEACH

- In 2000, the National Reading Panel identified five big ideas in beginning reading:

<table>
<thead>
<tr>
<th>Phonemic awareness</th>
<th>The ability to hear, identify, and manipulate individual sounds in a spoken word</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonics</td>
<td>Understanding the relationship between the letters of written language and the individual sounds of spoken language and using these relationships to write and spell</td>
</tr>
<tr>
<td>Fluency</td>
<td>The effortless, automatic ability to read quickly and accurately in connected text</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>The ability to understand and use words to acquire and convey meaning</td>
</tr>
<tr>
<td>Comprehension</td>
<td>The complex cognitive process involving the intentional interaction between reader and text to construct meaning</td>
</tr>
</tbody>
</table>
THE ART OF TEACHING

- The Panel’s report provided teachers and schools with critical information about important content to teach in beginning reading.

- However, it is not just what teachers teach, it is also how they teach that can make a significant impact on student reading progress.
THE MARRIAGE

Evidence-Based Materials/Scope and Sequence

The “Art” of Teaching

= BOOSTED STUDENT ACHIEVEMENT

Jill Jackson, 2008

OBSERVED GROWTH IN READING

[Graph showing growth in reading over months from January to May]

FCRR
What is the *same* between these groups?

- Student
- Reading content
- Teacher expertise
- Learning time

What is *different* between these groups?

- Quality of instruction

---

**EFFECTIVE INSTRUCTION**

What we *teach*

- Big Ideas

How we *teach*

- Modeling
- Academic feedback
- Opportunities to practice

---

M. Coyne
**TEACHER MODEL**

- An explicit, overt, and unambiguous explanation, communication, or physical demonstration of reading content.
- **Teacher models are discrete teaching behaviors.**
- Teachers can model (a) definitions, (b) step-by-step procedures, (c) strategies / explanations, (d) facts.
- Teacher models can occur throughout lessons (e.g., during introduction of new material, review, guided practice, independent practice)
- Think-alouds are also considered teacher models
- A teacher model is not the same thing as a prompt to do something

---

**COMMON PHRASES TO USE FOR A TEACHER MODEL**

- “Watch me”
- “My Turn”
- “Watch as I”
- “This is...”

‘My turn: /ar/-artist ar’
EXAMPLES-TEACHER MODEL

- The teacher states, “This word is responsibility. When you have responsibility, there are things you are expected to do.”
- The teacher points to a syllable and says: “We know this is a closed syllable because the vowel is followed by a consonant, making the vowel say its short sound.”
- The teacher says: “The word is cat. Watch me tap this word: c-a-t  cat.” (The teacher taps below each letters and says its sound, then scoops the whole word.)
- The teacher holds up an irregular word card and states, This is the word have,  h-a-v-e  have.” (Teacher touches the word, spells the word, and reads it)
- When reading a story aloud, the teacher stops to demonstrate how to make a prediction. “I predict that next in the story the boy will climb the tree to get his cat.”

NON EXAMPLES-TEACHER MODEL

- The teacher asks, “Everyone, how many sounds does the word bat have?”
- The teacher says, “Let’s all say the word have.” The students read the word, but the teacher doesn’t.
- The teacher asks a small group of students to read words on a chart.
TEACHER MODEL: VIDEO EXAMPLE

ACADEMIC FEEDBACK

- Academic feedback is a teacher’s verbal reply, physical demonstration, or written response that is specific to and directed toward a preceding student(s) response.
- Academic feedback can follow group and individual responses.
- It can consist of a teacher correcting a student mistake or affirming a correct student response.
TYPES OF ACADEMIC FEEDBACK

Two types of Academic Feedback

- Error Correction
- Response Affirmation

ACADEMIC FEEDBACK: ERROR CORRECTION

- Error correction (i.e., corrective feedback) is a teacher’s response to a group or individual mistake
  - Can be...
    - Correcting (e.g., “That sound is…”)
    - Re-teaching a missed skill (e.g., “Listen as I read the words.”)
    - Redirecting a group / individual response (e.g., “Remember to say all of the sounds in the word.”)
EXAMPLES-ERROR CORRECTION

- The group incorrectly says the wrong vowel sound. The teacher responds, “Let’s try that again. Remember, the vowel sound is /oi/.”

- Billy misidentifies a word. The teacher re-teaches the word by stating, “The sounds in word are /t/ /z/ /v/ /ck/. The word is trick.”

- A small group has made consecutive mistakes with reading 2-letter blends in words. To prevent another error, the teacher redirects the group by stating, “Don’t forget to look at both letters [teacher points to the first and second letter in the blend].”

NON-EXAMPLES: ERROR CORRECTIONS

- The group identifies letter-sound correspondences from a chart. Two students say the incorrect sound. The teacher responds, “Nice job!”

- The group identifies letter-sound correspondences from a chart. Two students say the incorrect sound. The teacher responds, “No, say the sound again.”

- The group identifies letter-sound correspondences from a chart. Two students say the incorrect sound. The teacher shakes her head no and then transitions to a different activity.

- The group identifies letter-sound correspondences from a chart. The teacher transitions to a different activity and then responds, “Tomorrow, we need to be more careful with saying the sounds that letters make.”
ACADEMIC FEEDBACK: RESPONSE AFFIRMATION

- Response Affirmations confirm student correctness and/or add further support to a correct group or individual response.
  - *Response affirmations must be explicit* (not simply, “Yes!”)
  - *Academic feedback (in the form of a response affirmation) occurs each time a discrete response is reinforced*
  - *Often takes the shape of restating a correct student response*

ACADEMIC FEEDBACK: RESPONSE AFFIRMATION EXAMPLES

- Students correctly read the word *trick* and the teacher responds, “That’s right, that word is *trick.*”
- The group correctly names five different vowel combinations. After each vowel combination, the teacher responds, “Yes, */oi/.” “Yes, */ea/.” “Yes, */ew/.”
- After the class reads the list of sight words, the teacher rereads the list of words.
- If the teacher prompts students to provide more information or details regarding a story they just read (e.g., “Yes, Yogi was the main character. What else do you remember about what you read?”)
**NON-EXAMPLES-RESPONSE AFFIRMATION**

- The group correctly reads a list of sight words. The teacher shakes her head yes and then transitions to a different activity.

- Sammy correctly identifies several letter sounds. The teacher gives Sammy a thumbs-up.

---

**ACADEMIC FEEDBACK: VIDEO EXAMPLE**

![Image of a teacher giving feedback](image-url)
ACADEMIC FEEDBACK: VIDEO NON-EXAMPLE

OPPORTUNITIES TO RESPOND
- Individual responses
- Group responses
**GROUP AND INDIVIDUAL RESPONSES**

Group Response
Opportunity

Individual Response
Opportunities

---

**GROUP RESPONSE**

A response from *two* or more students.
Group responses can be:
- verbal responses or explanations
GROUP RESPONSE: EXAMPLES

- The teacher or instructional assistant asks, “Everyone, what letter is this?” All students respond.
- The teacher asks, “How many sounds are in the word trip?” Three of the 20 students respond.
- The students and teacher are practicing the alphabet by singing the alphabet song. More than one student is singing.
- The teacher says, “Isabel, tell me the sounds in the word cup.” Isabel gives the first sound and another student chimes in as she gives the other two sounds.
- The whole class reads a word list.

GROUP RESPONSE: NON-EXAMPLES

- The teacher asks, “Everyone, how many sounds are in the word trip?” One of the 20 students responds.
- The teacher asks, “Billy, can you tell me where the story takes place?” Billy responds.
GROUP RESPONSE: VIDEO EXAMPLE

GROUP RESPONSE: VIDEO EXAMPLE
INDIVIDUAL RESPONSE

- Individual Responses can be
  - Verbal responses or explanations
  - Physical demonstrations
  - Written answers if visible to entire class

- Individual Responses can be obtained via
  - A request to a specific student identified by the teacher
    - “Johnny, what letter?”
  - Questions posed to the group at large
    - “Who can tell me what word this is?”
    - “Everyone, which sound does this letter make?”

INDIVIDUAL RESPONSE: EXAMPLES

- The teacher asks, “Johnny, can you tell me what sound this is?? Johnny responds “/d/.”
- The teacher asks, “Who can tell me how many sounds are in the word raft?” Kate responds, “Four.”
- The teacher specifically asks a question to one student, however, a different student blurts out the answer (and the teacher confirms the answer).
- Following a teacher request, Sally reads the word playful on the board.
INDIVIDUAL RESPONSE: NON-EXAMPLES

- The teacher asks, “Everyone, tell me the sounds in break.” The whole class responds.
- The teacher asks Betty to read the words on the board, but four students help with the answer.

INDIVIDUAL RESPONSE: VIDEO EXAMPLE
**LET’S REVIEW**

**Modeling**

An explicit, overt, and unambiguous explanation, communication, or physical demonstration of reading content.

**Academic Feedback**

Error correction (i.e., corrective feedback) is a teacher’s response to a group or individual mistake.

Response affirmations confirm student correctness and/or add further support to a correct group or individual response.

**Opportunities to Respond**

Group: A response from two or more students

Individual: One student responds

**QUESTIONS**

![Questions Icon](image)
**Next Steps**

- Soon after break, we'll start to schedule coaching sessions
- 2x per week I will observe (data collectors will continue to observe daily)
- 2x per week post-observation conference (video recorded with an i-pad)
  - Start thinking about when and where this will take place
Appendix G
Coaching Protocol

Teacher ID______________________ Date______________________

Post-Observation Meeting

1. Discussion: How do you think the lesson went?

<table>
<thead>
<tr>
<th>What went well?</th>
<th>What would you change?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Provide feedback based on the fidelity

- Were there any missing steps in the Fundations routines? If good, reinforce fidelity.

_______ Did the teacher complete each activity?

_______ In a reasonable amount of time?

(Distinguish between did the teacher take more time due to teacher pace or was pace adapted due to student population?)

_______ Were all activities implemented as intended?

(E.g., Is the teacher saying all the sounds correctly? Did the teachers miss any steps?)

If YES, do one or more of the following (as needed)

- Review activity cue cards to go over missed steps
- Provide time guidelines
- Review Fundations lesson
3. Review data: print out data collected during coaching intervention

“Let’s review the data (the data that is displayed has only been collected during the coaching intervention). Our target behavior is __________. Remember that the critical feature(s) of the target behavior is/are:

<table>
<thead>
<tr>
<th>Modeling</th>
<th>Opportunities to Respond</th>
<th>Specific Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher provides a specific example of what he/she expects the students to demonstrate</td>
<td>Individual response: verbal responses or explanations given by one student Group response: 2 or more students responding or answering in unison</td>
<td>An explicit indication of correctness that reinforces the correct response OR correcting an incorrect response</td>
</tr>
</tbody>
</table>

Let’s look at the frequency of the target behavior. By examining the graph, you can see trends in your use of the target behavior.” Questions to consider.

- Is the data of the target behavior on an upward/downward trend?
- Is the data stable?
- Has the teacher been demonstrating use of the target behavior consistently (i.e., since the last observation)?
- If appropriate, has the teacher been demonstrating use of other target behavior consistently (i.e., since the last observation)?
- What was the frequency of other target behaviors?

Example: “This is a graph of teacher modeling during Fundations. As you can see, the trend line is showing a downward trend. The frequency of modeling is relatively
inconsistent with the highest data point of 25 and lowest 0. The last 3 data points were stable at 4, 0, and 2. It would be beneficial to incorporate more modeling into Fundations.

4. Describe how target instructional behaviors can be incorporated into Fundations
   - Review enhanced lesson plans

5. Provide the teacher with guided practice and feedback
   - Teacher practices the behavior
   - Coach provides feedback

6. Develop a plan to ensure the teacher focuses on incorporating the target instructional behavior during their implementation of Fundations
   - Enhanced lesson plan

7. Summarize next steps

   **Next Steps:**
   “Today we discussed the target instructional behavior: ______. Remember that the critical feature(s) of the target behavior is/are:
   You are doing an excellent job implementing ___________.
   We discussed ways that you could increase (target behavior). We have developed a plan for the next two days. Please let me know if you have any questions.”

8. Schedule next observations
Appendix H
Enhanced Lesson Plan

Unit 5, Week 1, Day 1

Focus: Opportunities to Respond (more group responses)

Drill Sounds Warm-Up (2-4 minutes)

Teacher Drill Leader:
- Review all vowels sounds
- New or challenging sounds
- 5 consonants for review

Introduce New Concepts (12-15 minutes)

Teach Letter-Keyword-Sound: au, aw
- Review the first 5 rows of the vowel team poster. Next, drill the new vowel teams:

Today we are going to learn two new vowel teams that say /ȯ/.

au and aw say /ȯ/.

I will say the letter-keyword-sound and then you can echo.

(follow teacher’s manual)

Teach Syllable Division

Tell the students that words are made up into parts. Sounds go together to make each part. Sometimes there is only one part, and other times there is more than one part.

These parts are called syllables. Each syllable is one push of breath. Every time a push of breath is needed it is a new syllable (or you can put your hand under your chin, clap). Say: catnip. The word catnip has 2 syllables. Model for the students.

Dictate words to students. Have students repeat the word and clap, hand under chin, use their breath to figure out the number of syllables. Show me with your fingers how many syllables are in the word. Everyone, how many syllables are in the word? (teacher raises her hand and lowers hand for response – can wither clap, snap - a consistent signal for students to respond).

Words to dictate: upset, bathmat, himself

Say

To read or spell longer words, you just have to read or spell one syllable at a time.

Because you can already read and spell closed syllables, it will be easy to read and spell longer words if you do one part at a time.

When we put two words together to make a longer word, we call that a compound word.
Compound Words

This is the word bath. What’s the word?

A bath is when you wash your body.

This is the word tub. What’s the word?

A tub is a wide low container.

When I put these words together, it makes bathtub. What’s the word?

bathtub

A bathtub is a container where you wash your body.

When we divide a compound word, we divide it between the two words.

Let’s try another word. This is the word sunset. What’s the word? This is another compound word.

GR: How many words are in a compound word? Everyone, how many words are in a compound word? (teacher raises her hand and lowers hand for response – can wither clap, snap - a consistent signal for students to respond).

Write the word sunset. Remember, when we divide a compound word, we divide it between the two words.

sunset

Scoop sunset just like I have up here.

GR: What are the two words that make the word sunset? Everyone, what are the two words that make the word sunset? (teacher raises her hand and lowers hand for response – can wither clap, snap - a consistent signal for students to respond).

Let’s think about what the word sunset means.

GR: Turn and Talk: Talk to your partner. Use the two words to define the word sunset (you can give them a sentence starter “I think the word sunset means…”

Not all with more than one part are two words put together. A word needs to be divided if it has two vowels separated by one or more consonants. Build the word mascot.

This is the word mascot. What’s the word?

mascot

GR: How many vowels are in the word? Everyone, how many vowels are in the word? (teacher raises her hand and lowers hand for response – can wither clap, snap - a consistent signal for students to respond).
GR: Show me with your fingers how many consonants are between the vowels (do a quick check). Everyone, how many consonants are between the vowel? (teacher raises her hand and lowers hand for response – can wither clap, snap - a consistent signal for students to respond).

That’s right. There are two consonants. When there are two consonants between the vowels, we divide the word between the consonants.

mascot

Scoop the word into syllables and then read the whole word. Have students echo you.

Practice some more words.

Write each word one of the type. This is the word... What’s the word? Have students repeat the word and clap, hand under chin, use their breath to figure out the number of syllables. Show me with your fingers how many syllables are in the word. Everyone, how many syllables are in the word? (teacher raises her hand and lowers hand for response – can wither clap, snap - a consistent signal for students to respond).

Now, write the word and scoop under the word to show where to divide the syllables.

Scoop under each word. Read the word by scooping under the syllables then read the word. Have students echo you.

goblin, public, napkin

Teach Trick Words (5 minutes)

against, knew, know

Start by saying, This word is_______, what’s the word?

Point out what is tricky about each word.

Do the activity as intended in the book.

*Extra group response – erase the word away
Appendix I
Coaching Fidelity Checklist

<table>
<thead>
<tr>
<th>Teacher ID ______________________</th>
<th>Date of Meeting ____________________</th>
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- Coach asks teacher how the lesson went
- Teacher describes what went well
- Teacher describes what she would change
- Coach discusses fidelity with teacher (lesson implemented as intended, time, off-script due to review)
- Coach operationally defines the target behavior
- Coach reviews data with teacher
- Coach describes how the target behavior can be incorporated into Fundations
- Coach explains how the teacher can incorporate the target behavior into Fundations lessons over the next 2-3 days
- Coach summarizes next steps
- Coach and teacher determine next meeting date

Notes:

Observer Initials: IOA: ☐