Increasing Use of High-Leverage Instructional Practices Among Teachers via Use of Bug-in-the-Ear Coaching Technology

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Abstract

Improving classroom management skills is a common theme in professional development offerings. Teachers' use of higher levels of high-leverage practices such as proximity, opportunities to respond (OTR), and positive feedback (PFB) have been linked to better student outcomes (Reinke, Sprick, & Knight, 2009; Skinner, Belfiore, Mace, Williams-Wilson, & Johns, 1997). This study investigated the effects of basic group instruction paired with instructional coaching via bug-in-the-ear (BIE) technology on in-service teacher's use of high leverage teaching practices (HLP). One district-employed instructional coach administered an intervention to three elementary school teachers with four to thirteen years of experience in a rural community school. In this multiple baseline across participants design an instructional coach offered succinct phrasing via BIE in order to coach teachers to increase the target HLPs. The practices targeted for measurement included: proximity, opportunities to respond (OTR), and positive feedback (PFB). Results of the study as well as implications for future research were discussed.

Dedication

I dedicate this dissertation to my wonderful family, especially my husband, Jeff, and my children, Emmi and Calvin. They were patient and caring when I needed it most. Thank you Nana for helping feed Jeff and the kids. Dad, I miss you, I finally finished!

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Chapter I: Introduction

Background and Need for the Study

Students with disabilities comprise approximately 13% of the school population (Institute of Education Sciences IES, 2014). General and special education teachers serve a growing number of students receiving special education services with a wide variety of disabilities in least restrictive environments (LRE), including general education settings. These students may have a range of disabilities and support needs, including emotional behavior disorders (EBD), learning disabilities (LD), motor disability, and autism spectrum disorder, as well as many other challenging conditions. According to Turnbull, Stowe and Huerta (2007), disability, along with other factors, such as poverty, family structure and challenges, language, and geography, may have a significant effect on a student's educational success and outcomes.

On a national average, a practicing teacher in an elementary school teaches 20 students per year and a middle school teacher might have 23.4 students per class period (US Department of Education, National Center for Education Statistics 2012). Multiply this number by the number of years a teacher is in the classroom, and the aggregate student result could be in the hundreds.

During the elementary and middle school years the students are just getting to know themselves and they are developing skills they will use as adults. They are learning to complete work, to listen and to process what is happening around them to make decisions, and starting to realize how others view them. Teachers are tasked with having to get to know their diverse group of students enough to promote learning, intrinsic

motivation, as well as good citizenry. Reaching these important goals can be aided through knowledge and use of effective-practice classroom management techniques

General and special education teachers often lack self-efficacy and report feelings of being "underprepared to manage misbehavior effectively" (Neilsen-Gati, Kleinke, & Russel, 2012, p. 87). This has led to a need for the development of appropriate, effective and proactive classroom management methods to help achieve desired student outcomes (Clunies-Ross, Little, & Kienhuis, 2008). Clunies et al. (2008) described proactive strategies as the teacher behaviors that decreased the possibilities of students' problem behaviors. General education teachers are required to use evidence-based practices in the classroom but receive little training on how to effectively teach students diagnosed with various disabilities (Simpson, Mundschenk, & Heflin, 2011). "Evidence-based practices are instructional techniques with meaningful research supporting their effectiveness that represent critical tools in bridging the research to practice gap and improving student outcomes" (Cook & Cook, 2013, p. 71). For purposes of this study these methods are referred to as high-leverage practices (HLP; Ball, Sleep, Boerst, & Bass, 2009; Ball & Forzani, 2011; Zeichner, 2012; Grossman & Hammerness, 2009). Ball et al. (2009) define HLPs as "teaching practices in which the proficient enactment by a teacher is likely to lead to comparatively large advances in student learning" (p. 460).

Increasing teachers' self-efficacy may be contingent upon their ability to apply HLP that will effectively minimize disruptive classroom behavior. One way to support teachers in the use of HLP to increase their self-efficacy and improve classroom management has been through instructional coaching. Instructional coaches, sometimes called teacher leaders, "are pivotal in the creation of change through professional

development" (Gallucci, Van Lore, Yoon, & Boatright, 2010, p. 923). Joyce and Showers (2002) reported knowledge and skill gain as well as transferring knowledge and skill into action improved by 95% when coaching was involved in the professional development (PD). Additionally, the authors suggested that coaching contributed to the transfer of training in the following ways: (a) new strategies were practiced more often and with greater skill than noncoached teachers who had identical initial training; (b) strategies were adapted to teachers' own goals and contexts more appropriately than noncoached teachers; (c) skills were retained and increased over time for the coached teachers; (d) coached teachers were more proficient at explaining the strategy and its purpose to students; and (e) coached teachers demonstrated clearer understanding of purpose and use of new strategies (Joyce & Showers, 2002).

Instructional coaching provided differentiated support for teachers as they implemented HLP, such as use of proximity, opportunities to respond (OTR) and positive feedback (PFB), into their teaching (Knight, 2007). Coaches partnered with teachers to unpack their current instructional and management issues and then set goals to address the issues (Knight, 2007). During this process, the coach and teacher identified a goal and determined teaching behaviors, such as HLPs that focused on improving management and related instructional methods. By targeting behaviors, the coach guided the teacher in the classroom setting to use the techniques that increased the teacher's ability to deliver HLPs to their students, as well as raising the teacher's self-efficacy at the same time. One innovative way instructional coaching can be delivered to teachers has been through bug-in-the-ear (BIE) technology (Rock, Schumacker, Gregg, Howard, Gable, & Zigmond, 2014; Scheeler, Congdon, & Stansbury, 2010).

The following literature review discussed both instructional coaching and BIE technology as promising PD tools. There was limited professional literature on these methods; and published descriptions of procedures for effectively using these strategies in educational settings were also limited The limited professional literature and strategies for using HLP in educational settings constituted a need for research in this area.

Statement of the Problem

Teacher lack of self-efficacy related to their classroom management skills has been cited as one of the highest rated reasons teachers leave the field (Aloe, Amo, & Shanahan, 2014; Brouwers & Tomic, 2000; Elford, 2013; Skaalvik & Skaalvik, 2010; Tschannen-Moran & Hoy, 2001). Cluinies-Ross et al. (2008) described classroom management practices that have been effective in reducing student problem behaviors before they happen and have increased on-task behavior as proactive strategies. Moreover, increasing the use of effective classroom management skills, or HLP such as proximity, OTR, and PFB, have been linked to better student outcomes (Reinke, Sprick, & Knight, 2009; Skinner, Belfiore, Mace, Williams-Wilson, & Johns, 1997). While HLP have the potential to impact student outcomes, in this study student outcomes were not measured. Instead, this study focused on the use of coaching to increase teacher use of three HLPs.

There are three HLP that will be further investigated in this study. Proximity, OTR, and PFB are proactive positive classroom management practices that have been effective in reducing student problem behaviors and can increase on-task behavior (De Jong, 2005). According to Hattie (2007), providing increased levels of opportunities for students to respond has been linked to effective teaching. Sutherland, Alder and Gunter

(2003) reported that an increased rate of OTR and teacher praise had "positive effects on both the academic outcomes and the classroom behaviors of students with EBD" (p.240).

Therefore, the lack of teacher use of HLP may somewhat explain poor school-related outcomes among students with disabilities (Duchnowski, Kutash, Sheffield, & Vaughn, 2006; Greenwood & Abbott, 2001; Landrum, Tankersley, & Kauffman, 2003). , The relationship between using HLP and student outcomes such as increased student engagement and decreased student misbehaviors has been evidenced in the literature and discussed in the following literature review. One means of improving students' educational outcomes and empowering teachers has been to prepare them to effectively use HLP such as proximity, OTR, and PFB.

School districts have had to choose how to address the issues of teachers' poor self-efficacy and poor student outcomes, and their choice has often been PD. Unfortunately, PD curricula and content have been difficult to grasp in a one-day workshop (Barton, Chen, Pribble, Pomes, & Young-Ah, 2013; Klinger, 2004; Klinger, Boardman, McMaster, 2013; Scheeler, Ruhl, & McAfee, 2004).

As an alternative to traditional one-day workshops, instructional coaching has been one way teachers have been able to improve use of targeted high-leverage practices that have led to better classroom management (Barton et al., 2013; Cavanaugh, 2013; Reinke, et al., 2009; Scheeler, Congdon, & Stansbury, 2010; Simonsen, Myers, & DeLuca, 2010). Instructional coaching for teachers has been similar to coaching athletes (Duchaine, Jolievette, & Fredrick, 2011; Joyce & Showers, 1982; Maeda, 2001); a targeted skill was chosen for development, discussed, practiced, observed, and analyzed (Duchaine et al., 2011). Increased implementation of HLPs has improved classroom

management and instruction when instructional coaching was chosen to complement PD (Showers, 2002). As literature previously reviewed indicated, with increased implementation comes increased teacher self-efficacy and positive student outcomes.

Coaching offered practicing professionals involved in PD an opportunity to improve their correct use of targeted behaviors and skills over a period of time by receiving feedback from experienced coaches (Scheeler, Ruhl, & McAfee, 2004). Feedback in the form of coaching for teachers has been an effective way of improving teaching behaviors (Scheeler et al., 2004). According to Myers and Simonsen (2011) instructional coaches have offered valuable information to teachers via a variety of forms: "(a) review of data on teacher performance, (b) praise for correct implementation, (c) corrective feedback on procedures used incorrectly or infrequently, (d) problem-solving, and (e) opportunities to address questions" (p. 38). Coaching sessions that follow standard in-service training as PD offered support and feedback for teachers as they implemented these new strategies in their classrooms.

Instructional coaching has offered in-service teachers the opportunity for support and feedback to become more effective teachers. By coaching specific targeted behaviors, such as OTR, proximity, and PFB, the teacher immediately learned to perform the actions suggested by the coach. Hattie and Timperley suggest, "feedback is a consequence of performance" (2007, p.81). That is, whatever happened after the performance of an action, be it spoken or written, and whether it comes from a teacher, parent or peer, was feedback. Feedback has been valuable, as it affects the learner in such ways as increased effort, increased error detecting skills and better strategy development (Hattie & Temperley, 2007). Hattie and Temperley (2007) suggested

feedback has been more effective when the focus was on correct rather than incorrect responses.

It has been difficult to provide effective and individualized instructional coaching to a group of teachers during a one-day workshop (Sprick, Knight, Reinke, & McKale, 2006). In one-day trainings, the content has been delivered to the whole group, and differentiation for individual or personalized instruction has been rare. On the other hand, instructional coaching has provided opportunities to offer individualized instruction that are personal and specific to each teacher involved in training. One of the barriers to instructional coaching has been the time it took to observe classrooms, hold individual conferences with the teachers to discuss the observation, create a plan of action, and implement the plan while the instructional coach continued observing, monitoring progress, and delivering observational results to teachers. The meetings between coach and teacher often occurred during planning periods or after school. Teachers sacrificed planning periods as well as time after school to meet with the instructional coach. Students might have missed extra tutoring or support during those times because the time was being spent with the coach discussing the observation data. Therefore, there needs to be a way to deliver in situ skill-specific information to teachers that does not take time away from students. There have been recent technological advancements that may offer training alternatives (Rock et al., 2014) to the two aforementioned training scenarios.

One way for teachers to experience and learn to practice HLP has been to receive real-time feedback (coaching) via BIE technology (et al., 2010; Rock et al. 2009; Scheeler et al., 2004). BIE has been effectively used in the field of clinical psychology since the 1950s to offer adults specific interpersonal skill training (Korner & Brown,

1952). Recent studies described coaching done with pre-service, novice, and seasoned teachers who were coached through BIE technology, who specifically used an inexpensive blue-tooth device (Elford, 2013; Goodman, Brady, Duffy, Scott, & Pollard, 2008; Rock, Gregg, Thead, Acker, Gable, & Zigmond, 2009; Scheeler et al., 2010). Similar to coaching for specific interpersonal skill training, coaching through BIE provided a way to coach teacher's correct use of targeted teaching behaviors (Elford 2013; Farrell & Chandler, 2008; Giebelhaus, 1994; Kahan, 2002; Goodman et al., 2008; Rock et al., 2009; Scheeler, Congdon, & Stansbury, 2010).

Moreover, research from the past three decades has identified the need for teachers to use HLPs to improve their classroom management skills (Simonsen, Myers, & DeLuca, 2010). These targeted HLPs, such as teacher proximity, offering OTR, and PFB, could be beneficial ways of increasing a learner's academic engagement (Simonsen et al., 2010). In sum, instructional coaching through BIE has been a logical and efficient way of increasing use of these high-leverage practices and improving learning environments and outcomes among students with disabilities (Scheeler et al., 2010).

Purpose of the Study

The purpose of this study was to determine the effectiveness of using BIE technology to deliver coaching for specific high leverage teaching practices subsequent to the of instruction about HLPs through PD. The participants were teachers involved in a PD training at their own schools, followed by the BIE intervention being implemented in their own classrooms. The dependent variables of this intervention were the rate at which participating teachers used HLPs, specifically, instructional proximity, offering

opportunities to respond (OTR) and giving positive feedback (PFB) during their routine classroom instruction.

Definition of Terms

For the purposes of this study, basic definitions of salient terms have been provided. Specific operational definitions of these terms are provided in the methods section.

Coaching. Coaching referred to the delivery of information "regarding some aspect(s) of one's task performance" (Kluger & DeNisi, 1996, p. 255). Relative to this study coaching involved direct prompts via BIE to the in-service teacher participant (ISTP) in reference to the targeted behaviors of: proximity, OTR, and PFB. The BIE coaching prompts were meant to elicit these three HLP behaviors.

Feedback. Feedback was defined as an acknowledgement to a student from a teacher that was positive in nature and contingent on student behavior (Scheeler & Lee, 2002). Feedback can be verbal, gestural or in token form.

Proximity. Proximity was defined as a teacher physically present within arm's length of any student in the classroom (Conroy, Asmus, Ladwig, Sellers, & Valcante, 2004). For purposes of this study, proximity occurred in three situations. First, proximity was in response to student behavior (i.e., the teacher moved nearby a student who was off-task). Second, proximity was *not* contingent on student behavior and was a proactive strategy to prevent problems or maintain student appropriate behavior, such as situations in which the teacher stood or sat next to a student during instruction, an interaction, or to monitor a student's work. Third, proximity was used as a proactive strategy to maintain

general classroom management, such as when the teacher walked around the room to encourage increased student engagement from the class as a whole.

Opportunities to Respond (OTR). Opportunities to respond referred to as solicitations or invitations from a teacher for a student to respond to an academic directive or question (Sutherland, Wehby, & Yoder, 2002). For purposes of this study, OTR could be directed to the group (e.g., "everybody, what is 3x3?") or to individual students (e.g., "Sue, what is the name of this shape?"). These directives came in several forms, including verbal, written (on whiteboard or paper), or used hand signals.

Student misbehavior. Student misbehavior referred to when the student's behavior interfered with learning of the student or others (Kearney, Plax, Richmond, & McCroskey, 1984). Student misbehavior examples were: student was under table during instruction, student was poking his neighbor during instruction, or student was roaming around the room during instruction.

Chapter II: Review of Related Literature

Introduction to Literature Review

In 2001 the Department of Education released the No Child Left Behind (NCLB) Act (USDE, 2010). One very important stipulation in this legislation was the need for highly qualified teachers (USDE, 2010). Highly qualified teachers (HQT) have been a necessary commodity for all learners, especially students in high need schools, although often our best teachers are assigned to the highest performing schools (USDE, 2010). According to the Kansas Department of Education (KSDE), the state's plan for ensuring students are getting HQTs included many strategies. Two of those strategies, designed to significantly improve the way PD was offered, have been targeted PD and the use of master teachers and coaches (KSDE, 2006).

The use of instructional coaches to increase high-leverage practices (HLP) among teachers was not a new concept. In the early 1980's Madeline Hunter's Program for Effective Teaching (PET) was implemented in South Carolina (Mandeville & Rivers, 1991). This program had several goals, and one of those goals was to use instructional coaching to improve teaching practices. Mandeville and Rivers presented the results of three related studies stating: "the goal of the Hunter model is that teachers develop a conditional knowledge (i.e. knowing when and why various procedures are appropriate and recognizing when modifications are necessary) of teaching" (Mandeville & Rivers, 1991, p. 378). Mandeville and Rivers (1991) also stated that the coaches in this study were often the principal who usually had two PET cycles of training, in comparison to the other coaches who had three cycles of training, thus acknowledging that more consistent and trained coaches were necessary for success. Though the three aforementioned

studies were not deemed successful for achieving improved student outcomes, the authors suggested that this was due to the lack of fidelity in implementing the Hunter PET model as well as the need for skilled coaches to implement the model (Mandeville & Rivers, 1991). The more recent research on instructional coaching from the years 2002-2015 showed promise and has been discussed later in this review. Related to the extant literature, this study proposed research on the use of school district coaches that were experienced in coaching use of HLPs as well as fidelity of implementation of the coached interventions.

The purpose of this literature review was to first summarize the research related to the importance of high-leverage practices that increased classroom management skills, specifically proximity, OTR, and PFB. Second, this review has appraised the research pertaining to instructional coaching, of instructional feedback in general, feedback to teachers and how instructional coaching has been used to give feedback. Lastly, this review has introduced research related to bug-in-the-ear coaching as it related to instructional coaching.

The process used to locate peer-reviewed articles for this literature review included searches of the following databases: ERIC, JSTOR, Academic Search Complete, and Google Scholar. Search terms entered into the databases were “high leverage practices education,” “opportunities to respond education,” “proximity education,” “positive feedback education,” “instructional coaching education,” “Bug-in-ear coaching,” and “Whisper-in-my-ear coaching.” An ancestral search was then performed on the reference sections of obtained articles to find articles not identified in the original electronic search.

The following literature review has presented key information regarding each study. The first section of the review of literature focuses on high leverage practices and has summarized articles on classroom management, proximity, OTR, and PFB respectively. The second section presented articles on instructional coaching (from coaches to teachers) and BIE coaching to teachers. Each section: (a) contained the citation and the purpose of the article, (b) described the subject (c) describe the procedures and methods, (d) described the research design, and (e) described the summary of outcomes and findings.

High-Leverage Practices

Harrison, Bunford, Evans, and Owens (2013) have identified 149 high leverage practices through a literature review. None have been well researched in day-to-day classrooms. In an effort to bridge this gap, this study focused on three HLPs: proximity, OTR, and PFB. These three were selected because of their potential to increase classroom management procedures by teachers, their amenability to BIE coaching, and the ease with which teachers have been able to implement them. According to Sutherland, Wehby, and Copeland (2000) teachers reported strategies that were less time consuming to implement as more desirable than complex or time-intensive strategies. Of the three HLPs targeted in this study, proximity was arguably the least time consuming of the HLPs because it could be achieved when teachers were observed walking around the room while teaching, or sitting with a small or large group of students. OTR can be easily embedded into direct instruction and become routine to both teacher and students (Haydon & Hunter, 2011). Since OTR and PFB have been closely related, OTR the antecedent and PFB the elicited consequence, they were both measured for this study

(Albers & Greer, 1991). Extra time does not need to be set aside to use any of these HLPs into the school day, as they become integrated into the learning routine (Haydon, MacSuga-Gage, Simonsen, & Hawkins, 2012).

Classroom Management Skills. Classroom management and teacher burnout were a common theme in the next three studies in this review. In a recent study by Dicke, Elling, Schmeck and Leutner (2015) the authors compared three different groups of teachers: those who had classroom management training, those who had stress management training, and a control group with no training. The goal was to see if they could reduce teacher stress and thus reduce teacher burnout by providing training. They followed 97 novice teachers in Germany with an average age of 27 where 69% were female. The results showed that "participating in classroom management training led to higher self-efficacy in classroom management, higher perceived success, and fewer classroom disturbances than participating in stress management training or having no training" (p. 7). Piwowar, Thiel, and Ophardt (2013) evaluated the effectiveness of a classroom management in-service program for secondary teachers. The participants were 19 teachers in the intervention group and18 teachers in the control group who taught in urban schools in Germany. The intervention group received all three modules "lecture, small group video analysis, microteaching, role-playing and individual reflection on [their] own video-taped performance" (pg. 5). The control group only received one module, which contained lecture and the small group video analysis. This quasi-experimental non-randomized pre-test/post-test design reported that all 37 participants showed gains in knowledge of classroom management skills, yet only the intervention group showed gains in competencies and student engagement. Finally, Aloe et al. (2014)

examined self-efficacy of classroom management skills in relation to teacher burnout through a systematic review of the literature. The authors reviewed 16 studies, concluding teachers with high levels of self-efficacy of classroom management skills were less likely to experience burnout. The articles reviewed in this section indicate the use of effective classroom management skills resulted in decreased teacher burnout (Aloe, et al., 2014) and increased student engagement (Piwowar et al., 2013).

Management of Classroom Behavior via Use of Teacher Proximity. The next two studies did not implement an intervention, but utilized observations of teacher proximity to assess its impact on student behaviors. Conroy et al. (2004) examined the effects of adult proximity on student behaviors by the observation of descriptive effects. Importantly, teachers and aides were unaware of the specific purpose of the study. The participants were six elementary school students diagnosed with Autism Spectrum Disorders (ASD) aged 5 to 7 in the general education setting. Target behaviors were observed and the presence or absence of adult proximity was noted. The conclusion was that adult proximity positively affected rates of engagement for the students. Kale (2008) also performed a study with no intervention by examining resources used for pre-service teachers as models for learning-centered practices. The authors conducted a content analysis on archived videos of 5th to 11th grade classroom cases from two websites that showcased learning centered practices using actual classroom lessons. Nine videos from each website were used. Data collected on types of proximity (intimate, personal, social and public further defined by authors with parameters) as well as if the interactions witnessed were teacher/student or teacher/group. The findings were that only half of the

time the teachers were at a close distance. Most teacher/student interactions happened while teachers were at the public distance.

De Jong (2005) describes the Student Behaviour Management Project which contained principles and characteristics of best practice identified in the survey and research. The authors performed a qualitative data analysis of 52 survey questionnaires as well as a literature review. The authors defined programs, student behavior issues, and best practice in order to develop a framework of guiding principles and practices. This information was then used to create the Student Behaviour Management Project (SOBMP). The survey concluded that a democratic classroom management approach consisted of such strategies as: proximity, development of student responsibility and positive reinforcement. Several years later, Reupert and Woodcock (2010) also identified classroom management strategies used by pre-service teachers and their reported self-efficacy of those skills. The SOBMP, a 31-question Likert-scale survey, was given to 336 preservice elementary teachers in Canada of which were 85% female. The results showed that low-level initial corrective strategies like proximity and use of student's name were employed the most, though the preventative strategies such as classroom routines were just as successful.

According to the literature reviewed here, proximity as a classroom management strategy was effective in reducing student problem behaviors. Cluinies-Ross et al. (2008) have identified strategies such as proximity to be proactive in that it can prevent problem behaviors from occurring. However, De Jong (2005) and Kale (2008) found that half of the student/teacher interactions happened at the greatest distance (public) of the four levels used in the study; intimate, personal, social and public. Empirical research

indicated proximity was a potentially effective strategy that has yielded positive results. It was also a "low-level" strategy, meaning it was easy and fast to implement (Reupert & Woodcock, 2010).

Management of Classroom Behavior via Increased Opportunities to Respond. Several studies suggested that four to six OTRs per minute should be given to students when they are learning new material (Partin, Robinson, Maggin, Oliver, & Wehby, 2010; Sutherland et al., 2003; Sutherland & Wehby, 2001). However, researchers have found the actual rate of OTR given to students was significantly lower, ranging from .156 to .163 per minute (Wehby, Symons, and Shores, 1995) to once every 2 minutes in large groups and once every 12.5 minutes individually (Pennington & Courtade, 2014).

Simonsen, Fairbanks, Briesch, Myers, and Sugai (2008) sought to identify evidence-based classroom management practices. Upon examination of 3,806 peer-reviewed articles, only twenty practices were identified meeting criteria for evidence-based practices in classrooms, with OTR emerging as one. Similarly, Harrison et al. (2013) reviewed each of the 149 HLPs identified in the literature and placed them into one of three categories: interventions, modifications and accommodations. Harrison et al. (2013) defined accommodations as: "changes to practices in schools that hold a student to the same standard as students without disabilities… but provide a differential boost… to mediate the impact of the disability on access to the general education curriculum" (p. 556). Modifications were defined as "practices in schools that alter, lower, or reduce expectations to compensate for a disability" (Harrison et al., 2013, p. 556) such as an alternate test at a lower reading level. Once the authors vetted those strategies that could be considered interventions or modifications, only twelve HLPs remained that were

found to meet the authors proposed criteria to be defined as accommodations. Using this criteria, OTR was found to be an effective accommodation.

Sutherland and Wehby (2001) examined the effect of increased levels of OTR on student academic and behavioral outcomes. In this literature review, which focused on students with emotional behavior disorders (EBD), or those who exhibited behaviors associated with students with EBD, the authors found that, though teachers rarely offer increased levels of OTR, studies showed that by providing increased OTR student disruptive behavior decreased while engagement and achievement increased. Sutherland and team followed the literature review with a single case study, using a reversal ABAB withdrawal design with an examination of the effect of increased OTR on student behavior (Sutherland et al., 2003). Using a frequency count of the first 15 minutes of each math lesson, the authors concluded that the mean rate of correct responses increased with more OTR. Skinner et al. (1997) compared the effects of interventions of written or verbal OTR. This multiphase alternating treatment study compared two self-managed interventions of two elementary students diagnosed with behavior disorders. The authors found the verbal responding intervention increased OTR and learning rates more than the written intervention.

This review suggested that offering students more OTR was an evidence-based intervention that yielded positive results, such as increased engagement while unwanted behaviors decreased (Simonsen et al., 2008). However, research suggested teachers do not provide enough opportunities for students to respond in order to garner the advantages it could bring (Sutherland & Wehby, 2001).

Management of Classroom Behavior via Positive Feedback (PFB) to Students.

Hattie (1999) searched the literature to identify practices that contributed to student achievement. Of 500 meta-analyses, he synthesized 200 articles in meta-analyses on evidence-based practices that effect student achievement. Using the 7000 effect sizes, Hattie (1999) found that feedback was in the top ten of evidence-based practices that positively impacted student achievement. Similarly, Simonsen et al. (2008) also examined the literature to identify practices that are evidence-based. Of the 3,806 articles reviewed only 20 practices were identified as having sufficient evidence to support use in classrooms. Of those practices, the authors suggested that brief, contingent, and specific error correction as well as performance feedback were practices with enough of an evidence base to use in classrooms.

The goals of the following three studies were to identify the rate at which teachers provide students feedback. Sutherland et al. (2000) examined the effect of observation feedback from teachers on the rate of behavior specific praise to students diagnosed with EBD as well as its effect on on-task behavior of students. These researchers used an ABAB withdrawal design with one special education teacher and a class of nine 5th grade students in a self-contained setting for students with EBD. The results showed a positive functional relationship between praise and on-task student behaviors. Another study led by Sutherland focused on praise statements given to students by teachers (Sutherland et al., 2003). They used a single case study reversal ABAB withdrawal design in inclusive classrooms for students with learning disabilities and EBD. The participants were nine students aged 8-12 years old diagnosed with EBD and LD. They found that teacher praise occurred at the rate of 4.4 statements per hour, and was increased to .45 per minute

(27 times per hour) following intervention. This increase not only had a positive effect on the behavioral outcomes of the students, but also their academic outcomes.

Hawkins and Heflin (2010) investigated praise strategies that sustained once the researcher-initiated intervention was removed. Strategies included video self-modeling and visual performance feedback. This multiple baseline with withdrawal design used volunteer teachers with 2-7 years of experience, each with master's degrees, to increase teacher praise and maintenance during withdrawal. They found during the intervention there were increased levels of praise across participants; however, only one teacher continued to sustain this rate of praise during withdrawal.

Other studies have examined the impact of positive versus negative feedback. Voerman, Meijer, Korthagen, and Simons, (2012) examined discrepancy feedback versus progress feedback. The authors investigated the types of feedback given to students as well the impact of a 3:1 ratio of positive to negative feedback. The participants were 78 Dutch secondary teachers videotaped for 45-70 minutes. Using descriptive statistics (MANOVA and ANOVA) they found only 6.4% of teachers gave progress feedback, while 41% of feedback was not specific. Just over half did not maintain 3:1 ratio; however 43.6% maintained positive to negative ratios ranging from 3:1 to 11:1. Beaman and Wheldall (2000) investigated the use of teacher praise in the classroom. They analyzed the current literature on using praise and reprimand versus approval and disapproval. This literature review included studies from the available literature in the 1970's to 1990's on teacher praise to determine the extent to which teachers use praise of appropriate behavior decreased classroom problem behaviors. The authors concluded that praise for appropriate classroom behavior was not often observed despite the

evidence supporting it from studies around the world. Similarly, Gable, Hendrickson, Young, Shores, and Stowitschek (1983) sought to measure praise and criticism in classrooms as a means to manage behaviors with the focus on praise statements given to students. The authors performed direct observation of teacher behaviors in 97 teachers in elementary classrooms of students with varied disabilities. They found that behavior specific praise occurred between 1.6 and 2.8 times per hour and that teachers gave less praise than criticism.

Research supports the notion that PFB given to students during instruction was an important HLP (Sutherland et al., 2000; Hattie & Temperley, 2007). Cossairt, Hall and Hopkins (1973) suggested that feedback should be corrective, systematic and positive. Feedback has effectively interrupted unwanted or incorrect behavior (Coulter & Grossen, 1997). Beaman and Wheldall (2000) succinctly summarized the importance of PFB, stating: "appropriate skills-based training of teachers in the effective deployment of praise and reprimands has been shown to be highly effective" (p. 443).

Summary of Classroom Management and High-Leverage Practices

Using proximity, offering more OTR, and giving PFB are three high-leverage practices that have been shown to positively affect classroom environments. However, research consistently demonstrated these HLP strategies are under-utilized in schools (e.g., Beaman & Wheldall, 2000; Gable et al., 1983; Hawkins & Heflin, 2010; Kale, 2008; Sutherland et al., 2003; Sutherland & Wheby, 2001).

Thus, providing teachers with strategies to increase their use of these HLP strategies has been necessary. However, when teachers are given one-day in-service opportunities to learn important skills, i.e. high leverage teaching practices included in

this review, the effects have not been as positive as coaching (Barton et al., 2013; Klinger, 2004; Klinger et al., 2013; Scheeler et al., 2004). Teachers have been more likely to use a strategy when they have had follow-up support (Kretlow, Wood, & Cooke, 2009; Joyce & Showers, 2002) thus the need for the instructional coaching of these behaviors.

Research pertaining to Feedback Given to Teachers

Feedback from coaches to teachers. The next few studies examined the effect of feedback to teachers on the use of HLP provided by instructional coaches. Cavanaugh (2013) reviewed the current literature to examine the impact of performance feedback and OTR. The authors focused on praise and OTR and found 22 studies to review. The review suggested that performance feedback coaching to teachers improved their use of praise of students in the classroom.

Colvin, Flannery, Sugai, and Monegan (2009) investigated classroom observations paired with feedback and their effectiveness and relevance of reducing students' off-task behavior. This case study used observational data following one male high school science teacher in his second year teaching in a suburban high school with 1,500 students. The teacher had asked for help with student attention and classroom strategies. Researchers used classroom observations focusing on classroom instructional settings, instructional practice and the students' behavior, then gave performance feedback to the teacher. The researcher and the teacher then made an action plan to improve HLPs during classroom instruction. The teacher was then observed again followed by another planning meeting. The authors found an increase in classroom engagement and a decrease in student problem behavior. Similarly to Colvin et al.

(2009), Mesa, Lewis-Palmer, and Reinke (2005) studied the effect of visual performance feedback on teacher's rate of praise to students as well as change in students' behavior. They used a multiple baseline across participants design with two job-sharing elementary teachers, where one teacher taught in the morning and one in the afternoon. The authors measured visual performance feedback on rates of praise as well as student behavioral and academic performance. They found that disruptive behavior remained low when the teachers provided praise 2-3 times per minute.

Unlike Colvin et al. and Mesa et al., who used observational feedback, Coulter and Grossen (1997) compared in-class and after-class feedback effectiveness in acquiring and maintaining targeted teaching behaviors. They used an adapted alternating treatment design using two different treatments with seven teachers with 0 to 20 years of experience. The researchers provided verbal feedback on two target behaviors (error correcting and point awarding), where a third behavior (progress monitoring) was measured but no feedback given was used as control. The researchers found behaviors receiving immediate feedback were acquired faster and at a higher level than after class feedback. The third behavior, progress monitoring with no treatment, did not increase at all. This study demonstrated the importance of immediate, specific feedback in coaching situations.

The following studies used training and feedback to effect change in teaching behaviors. Simonsen, Myers, and Deluca (2010) investigated the effects of explicit training and feedback on teacher target behaviors using a multiple baseline design across (teacher) behaviors. Three experienced special education teachers with at least 13 years of teaching were given either explicit training and feedback or only explicit training. The

teachers were then observed in their classrooms where OTR and specific praise were measured. The results showed that when the teacher received feedback their skills increased, but there was no significant skill increase when teachers only received explicit training. Barton et al. (2013) completed two studies that examined the effects of coaching preservice teachers to implement interventions using a multiple baseline across participants, single-subject design. Nine preservice teachers during their final practicum teaching summer school classes participated. The authors measured interventions used when given only training or training and feedback during and after the lesson. The results showed that training alone was not associated with changes in behavior, while training with coaching was associated with teachers' use of interventions.

This review of the literature revealed that having an instructional coach give feedback to teachers was an effective way to increase target behaviors among teachers (Simonsen et al., 2010). Barton et al. (2013) concluded: "These studies support what is known about what does not work--lecture and one-stop trainings--and provide further validation of the use of ongoing coaching" (p. 346). In sum, instructional coaching with feedback has been recommended (Hattie, 1999; Hattie & Timperley, 2007).

Feedback from coaches to teachers via BIE. The next section of this review focused on studies that have successfully implemented instructional coaching via BIE. Bug-in-the-ear (BIE) coaching technology has been noted as an unobtrusive way to provide the immediate feedback that Hattie (1999) suggested was the most effective for acquiring new skills and reinforcing desired behaviors amongst teachers.

Elford (2013) analyzed effects of immediate feedback delivered through BIE in a virtual classroom. Four in-service teachers with a minimum of three years teaching

participated in an alternating treatment single-case design. The researchers investigated if telecoaching via BIE to administer immediate feedback to teachers in a virtual reality lab (TeachLivE) increased certain teacher behaviors and minimized certain classroom behaviors in students. The author found that telecoaching via BIE did increase teacher behaviors in three of the teachers but did not decrease certain classroom behaviors in student avatars.

Three studies examined physical education teacher training and the use of feedback via BIE. Giebelhaus (1994) investigated the use of BIE to give immediate and appropriate feedback to student teachers from cooperating teachers to change student teachers' target behaviors in classroom settings. Twenty-two elementary physical education student teachers and their cooperating teachers participated in this single case research design. They found student teachers made immediate changes 88%-100% of the time during the interventions. Kahan (2002) studied the effect of BIE pertaining to communication characteristics, cooperating teacher satisfaction and attitude of using the BIE device. They used an ABBA reversal design with one physical education student-teacher in a postgraduate licensure program with an experienced cooperating teacher. The study paired a type of BIE called (whisper in my ear) with the "thinking out loud" method to measure methods of communication and satisfaction of BIE communication exchanges. Types of communication measured were descriptive, prescriptive, and interrogative while types of content were management, instruction, and other. The findings were that both the teacher and student-teacher "believed that the discretion, immediacy, and feedback it offered was of value" (p. 101). Like Giebelhaus (1994) and Kahan (2002), Farrell and Chandler (2008) also examined physical education student

teachers. They investigated the effectiveness of WIME feedback versus traditional delayed feedback (observation, written, or verbal) to improve overall performance. A qualitative research design, with random assignment to WIME or traditional method of feedback (observation, written, or verbal), was used with eight cooperating teachers who each had four physical education student teachers. Both groups achieved equal mastery, though WIME students progressed at a faster rate.

BIE coaching was not only effective for preservice teachers as shown by the following three studies. Goodman et al. (2008) investigated the extent to which BIE feedback improved instruction of novice teachers. Using a multiple baseline design with three teachers with 0-3 years of experience each, the authors examined effects of BIE on Learning Units (LU) or instructional units. Instructional units are, according to Kretlow et al. (2009): antecedent, response and consequence. They found an increase in LU's delivered to students while teachers were being coached via BIE. Scheeler et al. (2010) sought to determine if BIE could effect change in teacher instruction in cooperative pairs. A multiple baseline across participants design was used with three dyads of co-teachers consisting of five females and one male. The authors assessed the effects of peer coaching via BIE on targeted teaching behaviors during classroom instruction. All teachers achieved 90% criterion within three coaching sessions as well as maintained and generalized in further sessions and settings without a coach present. Additionally, BIE has been studied with experienced teachers. Kretlow et al. (2009) **e**xamined the effectiveness of in-service plus coaching on instructional units in math (IUM). A multiple base-line across participants design with three kindergarten teachers with 6-22 years of experience was completed to examine the effects of adding coaching via BIE to in-

services to measure group instruction. An IUM consists of an antecedent, student response, and feedback. All teachers improved the delivery of the IUM as well as expressed satisfaction with coached strategies.

The following two studies both examined the use of BIE with students in a special education master's degree program. The first study by Rock et al. (2009) investigated the use of immediate feedback via BIE to increase HLP in preservice teachers. A mixed methods research design was used with 15 teachers with 1-20 years of experience enrolled in a field-based special education master's degree program. The authors measured changes in teaching behaviors and classroom climate as well as the disruptions and benefits associated with feedback delivered via BIE. Changes in teaching behaviors were statistically significant; classroom climate change was positive, as was teacher feedback about use of BIE. The next study went one step further and added longitudinal data along with BIE coaching. Rock et al. (2014) investigated if the continued use of BIE affects initial teacher improvements as well as how it was affected when BIE ends. The authors used a mixed methods design: quantitative data from archived video over three years and qualitative data through interviews. Of the fourteen participants, only two were males. They were all enrolled in a federally funded master's degree program in special education over six semesters. Both quantitative and qualitative results showed that eCoaching via BIE has improved teaching even after withdrawal.

Only a few studies have been published using BIE as a means of delivering real-time feedback to teachers. Nevertheless, existing studies suggested BIE holds promise in promoting use of HLP. Rock et al. (2009) reported student problem behaviors decreased during the BIE intervention with teachers' use of HLP. In summary, Rock et al. (2009)

found evidence to support the position that coaching teachers via the use of technology, such as BIE, was promising (Rock, et al., 2009) while Scheeler et al. (2010) has shown the changes in teacher targeted behaviors (three-termed contingencies or instructional units) were maintained even after the intervention of BIE coaching was withdrawn.

The three high leverage practices (proximity, OTR, and PFB) highlighted have not often been used with enough consistency by teachers to produce results (Hattie, 2007; Sutherland et al., 2003). In order to increase the use of these HLPs, coaching using BIE technology was examined. Coaching through BIE required no extensive time commitment as the use of high leverage practices like proximity, OTR, and PFB have been implemented easily. There were minimal basic steps to follow to implement these proactive HLP. These steps included: (a) for proximity, the teacher strategically stood within an arm's length of a student; (b) for OTR, the teacher offered students more opportunities to participate; (c) for PFB, the teacher positively acknowledge students' behavior and/or participation. The ease of implementation rested in the immediate delivery of each HLP; there was nothing to print, cut out, or prepare. The teacher simply learned to change his/her instructional behaviors to include these HLPs. As previously stated, one day in-service trainings have not been effective in changing teacher behaviors (Barton, et al., 2013; Klinger, 2004; Klinger et al., 2013; Scheeler et al., 2004). The needed follow-up support (Kretlow et al., 2009) in the form of instructional coaching has been given via BIE to effect change in both teacher and student behavior.

Chapter III: Methodology

Purpose

The purpose of this study was to extend the research on instructional coaching via bug-in-the-ear (BIE) technology as a means of increasing teacher use of high leverage practices (HLP) presented in traditional professional development. This study explored coaching via BIE technology during classroom instruction to determine if BIE coaching increased the use of HLP among in-service teacher participants (ISTP). Additionally, this study examined the social validity of using BIE during classroom instruction as a tool to increase HLP and improve classroom management.

Research Questions

1. Does a group-based professional development followed by BIE coaching increase the use of proximity in classroom environments?
2. Does a group-based professional development followed by BIE coaching increase the use of opportunities to respond in classroom environments?
3. Does a group-based professional development followed by BIE coaching increase the use of positive feedback in classroom environments?
4. Do effects of professional development followed by BIE coaching maintain after five weeks of time?

The dependent variables for this study included participating teacher's use of HLP strategies: (a) proximity, (b) opportunities to respond (OTR), and (c) positive feedback (PFB). The primary independent variable for this study was instructional coaching via BIE given to the in-service teacher after they received a PD on HLP. Social validity was

measured by survey questions including both Likert-scale and open-ended responses at the end of the study.

Setting

The ISTPs received training and were observed in their own classrooms in one school in Sugar Hill School District (pseudonym). The HLP instructional training took place at Bear Creek Elementary School (pseudonym) where the coach and the teachers were assigned to teach. According to the Kansas State Department of Education (KSDE, 2015) the Sugar Hill School District has six schools (n= 3 elementary, 2= middle school, 1= high school). The district was within a rural community with a population of over 5,400 people. The mean household income was $77,758, with 75.4% of the community being families (Spring Hill, 2015). Of the 2,871 students in the district, 83% students identified as Caucasian (KSDE, 2015). The school where all of the ISTPs were assigned, Bear Creek, was comprised of 89.63% Caucasian students. The school included 17.97% of students who were economically disadvantaged and 13.59% students who were identified as having disabilities (KSDE, 2015).

ISTPs

The ISTPs for this study were three general elementary education teachers with four to ten years of experience. After obtaining human subjects approval from the University of Kansas and approval for the study from the Sugar Hill School District, teachers were recruited by the district's instructional coach to participate in this study. The teachers included in the study had two stipulations to be included in the study: (a) they were teachers who participated in the PD, and (b) they were willing to receive BIE coaching from the instructional coach. ISTPs were not limited to teachers who had been

targeted for improvement by the administration or the instructional coach. Two of the teachers who volunteered to participate in this study had worked with the instructional coach prior to the study; however, teachers needed to only be willing to be coached using BIE to be able to participate. Teachers agreed to be taught the targeted HLPs through group in-service training instruction in the form of direct instruction, guided practice, and independent practice.

ISTP Demographics. All participants were referred to using pseudonyms. Abby was a 2nd grade teacher with 13 years of experience. She was working on a master's degree in leadership and administration. Abby had been Teacher of the Year in her grade school. She also had many student teachers and served as a mentor teacher for new teachers at her school. Abby had 23 students in her class including six students who had an IEP (two students who had been diagnosed with ADHD, one student who was in the gifted program, four students with speech services, two students with occupational therapy services and one student with a behavior intervention plan), five students who were being evaluated for potential special education services (two students being evaluated for learning disabilities and three students being evaluated for the gifted program) and one student on a behavior point sheet with no IEP.

Becky was a 4th grade teacher with four years of experience. She had a master's degree in curriculum and instruction. Becky had participated in workshops pertaining to behavior and reinforcement such as the Daggett Rigor and Relevance workshop. Becky had 23 students in her class including eight students who have IEPs (two students who had learning disabilities, three students with speech services, two students who were in the gifted program and one student with a behavior intervention plan).

Carrie was a 1st grade teacher with nine years of experience. She had taken 10 hours of graduate courses as well as participated in a Bureau of Education and Research seminar where the focus was teaching students with various problem behaviors. Carrie also served as the lead teacher in her grade and was on the superintendent's advisory council. She served on the student improvement team at her school. There were 22 students in her classroom of whom eight have IEPs (four students who have speech services, three students who have reading services, one student in the gifted program and one student with a behavior intervention plan) and one student being evaluated for special education services.

Dependent Variables

The following section provides definitions and examples for the high leverage teaching practices that were the dependent variables for this study: proximity, opportunities to respond, and positive feedback.

Proximity. Proximity was defined in three ways: First, proximity was in response to student behavior (i.e., the teacher moved nearby a student who was off-task). Second, proximity was *not* contingent on student behavior and was a proactive strategy to prevent problems or maintain student appropriate behavior, such as situations in which the teacher stood or sat next to a student during instruction, an interaction, or to monitor a student's work. Third, proximity was used as a proactive strategy to maintain general classroom management, such as when the teacher walked around the room to encourage increased student engagement from the class as a whole.

Opportunities to respond (OTR). OTRs were defined as teacher behaviors that invited or solicited a student response (Simonsen et al., 2010). OTRs could be directed to

a group of students, or to individual students. Examples of group OTR included: (a) Teacher asked for a verbal response such as choral response or for students to raise their hands as a sign they have an answer to a problem; (b) teacher gave students notecards of different colors to express agreement (green = agree, yellow = not sure, and red = disagree) in the context of instruction. Examples of individual OTR included when the teacher asked a specific child to show work on the whiteboard or when a specific child was asked to share a different way to solve a problem using manipulatives.

Positive feedback (PFB). Positive feedback was defined as an acknowledgement to a student from a teacher that was positive in nature and contingent on student behavior (Scheeler & Lee, 2002). Feedback can be verbal, gestural or in token form. Examples of PFB included: (a) statements that were specific to the behavior such as, "That answer was a great example of alliteration because all the words began with /d/", (b) simple phrases such as "yes, that is correct" and "right answer," as well as, (c) a nod, a high-five, a thumbs up or a pat on the back.

Independent Variables

Initial training session for ISTP and instructional coach. The intervention procedures for the study were outlined below. In order to acquire study participants and prior to collecting baseline data, the researcher delivered the initial HLP instructional procedures to the prospective participants via a PowerPoint presentation during a voluntary PD session after school (see Appendix B). Session attendees included the instructional coach and prospective participants, though it was open to all teachers in the school who chose to attend this PD session. This training was completed before the BIE coaching began and included: (a) explicit instruction on HLPs (proximity, OTR, and

PFB) including definitions (see Appendix B; 30 minutes), (b) guided practice of implementation of HLPs with various situational examples (see Appendix B; 10 minutes), and (c) time for brainstorming and independent work when given example statements related to students in various situations (20 minutes). The aggregate time for this training was 60 minutes.

Participating teachers then received coaching on the use of HLP practices via BIE. As part of the HLP coaching intervention, the participants received training that prepared them to become accustomed to wearing a Bluetooth device. ISTPs then wore a BIE Bluetooth device and received feedback during instructional time in their classrooms (20 minutes).

Instructional Coach. The district instructional coach in this study was a veteran female educator with nine years of coaching experience in the Sugar Hill District. This coach previously had 14 years of teaching experience in grades 1 through 4 in the general education setting. She also held a master's degree in elementary education. This professional educator received instructional coaching training from the Heart of Change organization on instructional and organizational improvement (2006).

The instructional coach employed by the Sugar Hill School district had previously been trained to use BIE to provide coaching. A post-doctorate researcher at the University of Kansas Center for Research on Learning administered this training at another elementary school in the Sugar Hill District. During this training, the instructional coach was given instruction and practice for using BIE and related technologies to coach two volunteer teachers, not the teachers in this study, during the 2014-2015 school year. The post-doctorate researcher considered the instructional coach

to be adequately prepared to participate in this research project. The researcher reviewed and directed the use of the technology required for BIE coaching with the district instructional coach. Additional training was offered to the coach pertaining to implementation of this study as discussed further in the fidelity section of this chapter.

After the coach mastered the use of technology and the concept of how to coach using BIE, the researcher for this study required the school district's instructional coach to demonstrate competencies germane to the BIE procedures described in this study. In particular, the instructional coach needed to demonstrate understanding of the HLP techniques associated with this study and protocol for coaching participating teachers in correctly using these methods. These procedures were designed to ensure the methods of the study were being implemented with fidelity.

Training in Use of Technology

The training for BIE coaching for the ISTP's and the coach included two parts: (a) how to use the BIE device and recording technology for the ISTP and the coach, respectively; and (b) how to deliver prompts to the ISTP and receive prompts from the coach. These training procedures were provided in the form of a training packet given to each ISTP and the coach. The information in the packet included task analyses that explained the training methods (see Appendix C).

How to use the BIE device. The teacher packet (see Appendix C) labeled "How to use the BIE device and recording technology" contained task analyses (created by the research team) that provided explicit directions on how to use each of the technology devices associated with the research study: iPad, internet, Bluetooth device, and FaceTime. This packet detailed how to use these devices in accordance with the protocol

of this research study. It also guided the ISTPs in making a FaceTime connection with the coach during the intervention. The training session for practicing use of the Bluetooth device took approximately 25 minutes.

How the coach used the recording technology. The coach was given the aforementioned training packet that contained specific instructional steps. Additionally, the researcher delivered explicit instructions describing these procedures: (a) how to create an online connection between the computer and the ISTP's iPad, and (b) how to capture the session using QuickTime on the Mac computer (Florida Center for Instructional Technology, 2011). The training session for learning how to use the recording technology took 20 minutes.

How the coach delivered prompts to the ISTP. During the BIE coaching training, emphasis was placed on developing a partnership between the coach and ISTP. In 2007 Knight created norms for partnership building and establishing rapport (see Figure 1).

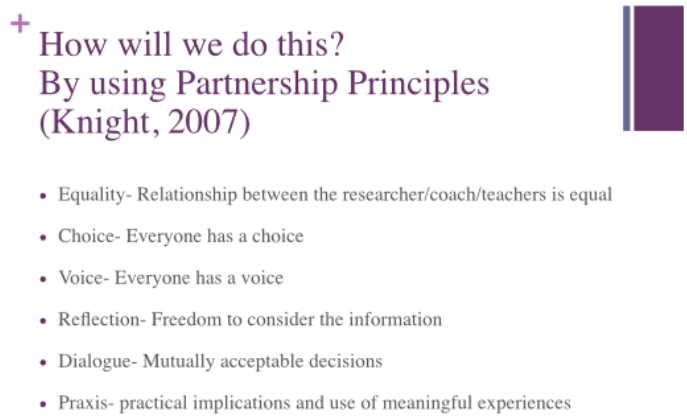


Figure 1. Partnership Principles

The partnership and rapport building process focused on five basic components: equality, choice, voice, dialogue and praxis. Equality was emphasized ensuring the

relationship between the researcher, coach, and teachers was equal. That is, the researcher, instructional coach and classroom teacher were equal-status professionals who were cooperatively involved in promoting improved learning outcomes of students. Choice encompassed each study member's ability to make choices collaboratively, or on her own. The researcher, coach, and teachers worked together to collaborate during decision-making practices. Voice referred to all study members' opinions being valued. The partnership between the researcher, coach, and teachers required active participation by all. Dialogue involved all ISTPs learning together through conversation and exploration. Praxis referred to the practical implications and use of meaningful experiences. All study participants, researcher, coach, and teachers were to use what was learned in meaningful ways to enhance learning for the students.

Coaching prompts used by the instructional coach were in the form of short one or two word phrases. The coach was instructed to work with the ISTPs so both members of the dyad were clear on what the various prompts meant and what responses the ISTP should have performed after receiving a prompt. For instance, the coach and the ISTP agreed that the prompt, "*student name,* prox" indicated that the ISTP should move to stand within one arms-length distance from the designated student. The coach was trained to wait until the ISTP stopped speaking (whenever possible) before delivering a prompt.

How ISTPs responded to coaching prompts. During this last phase of training, the ISTPs observed while the coach delivered prompts to the researcher and the researcher modeled ways in which to respond to the prompt. The training showed that an appropriate response to a coaching prompt was to implement the HLP given by the coach. No verbal response by the ISTP to the coach was required. The partnership

formation from Knight (2007) and the prompting procedures (Elford, 2013; Scheeler et al., 2010) were the last two parts of the training (20 minutes).

Implementation of the BIE intervention. The coach read the BIE session preparation coaching checklist and advance organizer to the ISTP before each BIE intervention (see Figure 2). This included the goals of the session explicitly stated by the instructional coach: "Please manage the classroom using the classroom management strategies that include: giving students proximity, opportunities to respond, and positive feedback. Your goals for today will be to successfully complete your lesson while appropriately engaging the students and managing any undesired behavior." Delivering the advance organizer to the ISTP took no more than 14 seconds each day.

Check with the ISTP to see if they have questions – put them at ease.
Check the technology (should be done so as not to disturb the students): o Pair Bluetooth to iPad o Have ISTP put on Bluetooth device. o Make sure Wi-Fi is on and FaceTime ready on iPad o Place iPad in the classroom with rear camera facing classroom (screen is towards wall) o Place MacBook Pro and coaching Recording Form in workspace o Prepare QuickTime on MacBook Pro for recording o Connect with iPad via FaceTime
Read the Advance Organizer to the ISTP: **"Please manage the classroom using the classroom management strategies that include: giving students opportunities to respond, using proximity, and delivering positive feedback. Your goals for today will be to successfully complete your lesson while appropriately engaging the students and managing any undesired behavior."**
Take data using coaching Recording Form: Keep track of the OTR, proximity, and PFB you use through the use of the form and tallies in minute increments.
Coach using these prompts for the ISTP to follow: o Opportunities to respond – Prompt will be "OTR" or specific suggestion of response form (i.e. whiteboards, thumbs up) o Proximity – Prompt will be " prox" o Positive feedback – Prompt will be "feedback"
Finish the session with: **"Thank you. Our session is ended."**

Figure 2. BIE Session Preparation and Coaching Checklist

Coach ISTP in the classroom via BIE. The coach was in the classroom pod (teacher workroom resembling a closet) between rooms or in her office watching the ISTP through a computer that received the image from an iPad located in the ISTP's classroom. Per the procedures outlined above the coach gave prompts for the ISTP to direct, enable and facilitate the participating teachers in applying the identified HLP methods:

- Proximity – Prompt was "prox" and was used when the coach saw an opportunity for the teacher to use proximity as either a response to student behavior or to proactively encourage a student or the class. This was delivered in a short phrase, for example: "prox, Jessie" to prompt the ITSP to move to Jessie. In addition, the prompt "prox, class" was used when the ISTP was not within arms-reach of any of the students. Example: when the coach saw the teacher sitting at her desk during instruction, the prompt was to inform the ISTP to move around the room to offer proactive classroom management support.
- Opportunities to respond – Prompt was "OTR" and was used when the coach saw opportunities for the ISTP to extend an OTR opportunity for either the class or individual students to respond. Example: During a mnemonic instructional session, the coach said, "whiteboards." The teacher then followed with, "class, write the answer on your whiteboards." When the coach prompted the ISTP to target a specific child, one prompt used by the

coach was, “Caden, OTR”. Subsequent to receiving this prompt the ISTP said, “Caden, please write your answer on the board for us.”

- Positive feedback – Prompt was “feedback” and was used when the coach saw an opportunity for the ISTP to communicate to a student or a group of students using positive feedback, according to the research training protocol. For example: if the ISTP gave an opportunity for the students to respond, then a follow-up was for the teacher to offer feedback about that response. Acceptable feedback were phrases such as “good”, “yes!”, “you are right” or “nice job”, but more detailed feedback was encouraged such as, “Frank, using the blocks to show the area was a great strategy.” Additional feedback unrelated to an OTR was also acceptable and could be in the form of a nod, pat on the back, or token system.

Data Collection Procedures

All sessions during which data were taken, have been visually recorded using the camera on a MacBook Pro computer with input from an iPad placed in the ISTPs classrooms. The MacBook Pro was connected to FaceTime, which has been standard on Apple devices. FaceTime allows a Bluetooth connection from the instructional coach to the ISTP who was wearing the BIE Bluetooth device.

The QuickTime program that was used has been standard on all Macintosh computers. The same instructional period of the day (math) was recorded for 10 to 20 minutes each day during the study. Partial interval recording data (Kennedy, 2005) were collected on the ISTP’s use of high leverage teaching practices. When the HLP occurred anytime during interval (20 seconds), the data sheet was marked with the appropriate

code (Kennedy, 2005). These data were collected during times participating teachers were coached via BIE devices as well as baseline data days. All of the baseline and coaching sessions were recorded during the same subject (math) across ISTPs. Math was chosen as the subject because, according to Whitney, Cooper, and Lingo (2015), elementary school teachers offer more opportunities to respond in elementary school math than reading. They also discussed that by high school there were more OTRs given by teachers in reading than in math. There were no studies found that differentiate the amount of OTR offered by grade level. Data collection protocols were outlined in the research design section of this chapter.

The researcher then observed the video of the coaching session to record and evaluate data in this study. Observations were made each night in order to record data and determine if the intervention was being implemented with fidelity. All sessions were 10-minutes in duration across all phases of the intervention (baseline, intervention and maintenance). The decision to have 10-minute sessions was for experimental purposes taking into consideration the possible invasiveness of the BIE intervention. The researcher reviewed each video and data were recorded for 10 continuous minutes, when possible, of the recording to measure the ISTP-related dependent variables: proximity, OTR, and PFB. The ten-minutes that were coded started when two requirements were met: (a) the coach was coaching and (b) the teacher was teaching. On three occasions the coach was unsure if 10 minutes were achieved, due to weather interfering with Wi-Fi connections. Therefore, the coach took two or three videos during those sessions to ensure there were 10 viable minutes. There was only one instance where two videos

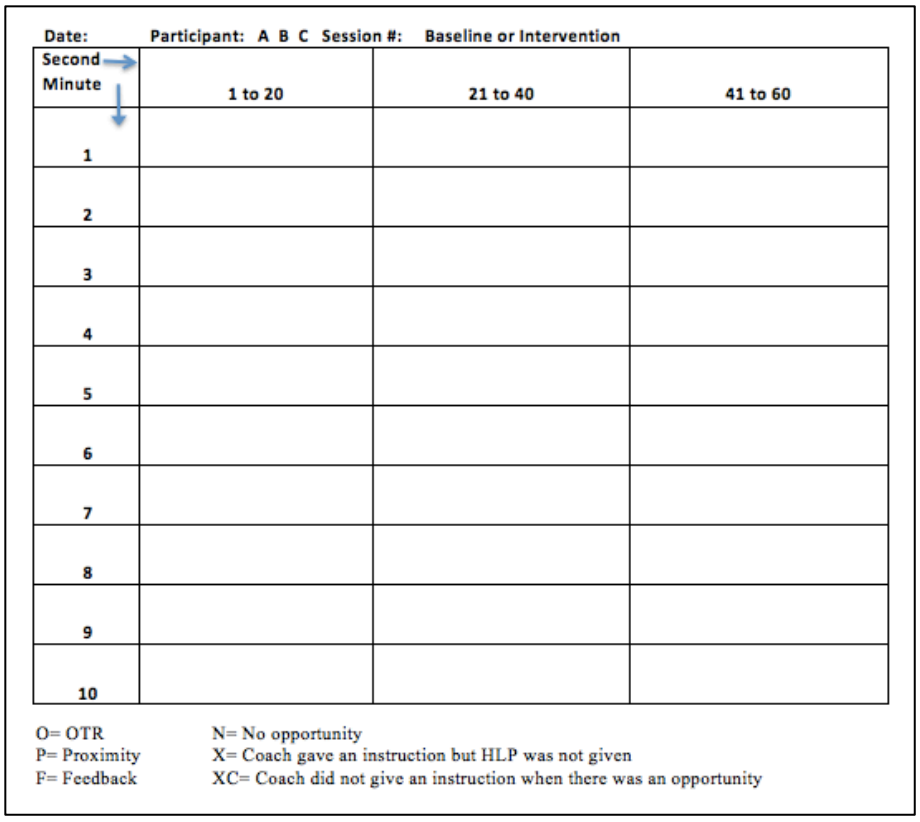
were used during coding. These conditions were fully described in the limitations section of this document.

The data collection procedure included both partial interval recording of the presence of HLPs and the specific HLP used and enabled the researcher to record each dependent variable present in each 20-second interval. When the HLP occurred anytime during the 20-second interval, the data sheet was marked with the appropriate code (Kennedy, 2005). Using the Partial Interval Recording Data Sheet for HLP (see Figure 4) the researcher recorded instances of the teacher's use of HLP behaviors by using partial interval recording in each 20-second interval. The presence of the HLPs (proximity, offering OTR, and PFB) was recorded on the partial interval recording data sheet (see Figure 4). All forms were modified from forms used in an IES funded Tele-coaching project (Knowlton, Wolf, Elford, Carter, & Jones, 2012) to ensure fidelity of the intervention during the study.

Sutherland et al. (2001) and Sutherland et al. (2003) suggested OTR be given four to six times per minute for students with EBD, however they also found that teachers actually only provide OTR an average of .25 times per minute (Sutherland et al., 2003). The decision to use 20-second intervals was made in order to try to replicate the amount of OTR that should be given in any given minute. If the ISTPs did indeed give OTR three times per minute for 10 minutes, then the resulting PFB recorded score was 30 times in 10 minutes or 3 times per minute. Though this was slightly below what Sutherland et al. suggested, it was still significantly higher than what Sutherland et al. found in the 2002 study. Since PFB should have been the consequence to OTR, it was also possible for

PFB to reach 30/30. Proximity was the easiest to implement and therefore, in theory could also reach 30 instances of proximity in ten minutes or three times per minute.

In addition to partial interval recording, specific data were also collected during recording intervals. Codes were used to designate the HLP that was observed during each 20-second interval during baseline, intervention, and maintenance phases: (a) O was recorded to indicate opportunities to respond, (b) P was recorded to indicate proximity, (c) F was recorded used to indicate positive feedback, (d) N was recorded if there was no opportunity for the coach to give an instruction, (e) X was recorded if the coach suggested an HLP and the ISTP did not use it, (f) C was recorded if the coach suggested an HLP to the ISTP and the ISTP did use it (specific HLP coached was also recorded), and (g) XC was recorded if there was an opportunity for the coach to suggest an HLP and it was not given. For example, in a 20-second segment there might be an O, P and an F recorded to indicate that all HLPs occurred during that particular period. This gave the researcher opportunity to record: (a) partial interval recording of the occurrence of any HLP, (b) the specific type of HLP used in each 20-second increment, (c) if coaching did or did not occur when there was opportunity to coach, (d) which HLPs were prompted; (e) if ISTPs implemented HLP as instructed, and (f) if there were any missed coaching opportunities.



Date: Participant: A B C Session #: Baseline or Intervention

Second → / Minute ↓	1 to 20	21 to 40	41 to 60
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

O= OTR
P= Proximity
F= Feedback

N= No opportunity
X= Coach gave an instruction but HLP was not given
XC= Coach did not give an instruction when there was an opportunity

Figure 3. Partial Interval Recording Data Sheet for HLP.

The coach was trained prior to the intervention using a self-regulating data form (see Figure 4) that ensured the coach was aware of the type of prompts given to the ISTPs as the coaching occurred. Specifically, the adapted form used in this study (see Figure 4) used one-minute measurement increments. This data sheet had a line for coaching comments for each minute of observation as well as boxes to mark that an HLP was coached. The coach's comments were also captured on the QuickTime video recording taken by the MacBook Pro computer during the FaceTime connection with the teacher. Once the study was over the researcher collected these forms and used them to ensure these experimental procedures were implemented.

Date:	Time:		Participant:	Coach:			
Coding	Subject:		Saved as:		High Leverage Practices		
Office Use Only	Minute	(+ or -)	Coaching comments made to participant	OTR	PBSF	Proximity	No Opportunity
	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						

Figure 4. Recording Form to be Used While Coaching (Self-Regulating)

Inter-Observer Agreement and Fidelity

IOA for coding the sessions. Kratochwill, Hitchcock, Horner, Levin, Odom, Rindskopf, and Shadish (2010) suggested inter-observer agreement to be performed in at least 20% of all observations across phases. They also suggested that the percentage of agreement (matches/total of matches plus disagreements) be on average 80% to 90% (Kratochwill et al., 2010).

A graduate student was trained by the researcher to evaluate and record observations using the operational definitions listed above for all target behaviors. To reach 90% agreement the researcher trained the graduate student using randomly selected five-minute baseline videos not previously coded, from the shorter videos not used in the study due to technology or weather. When the researcher and graduate student reached at least 90% agreement on three consecutive occasions, training ceased. Inter-observer agreement for sessions was calculated using a total agreement formula where the number

of each individual HLP recorded by the researcher was compared to the number recorded by the graduate student. The formula used was HLP matches/total of HLP matches plus disagreements (Kennedy, 2005). Each HLP was counted and reported separately in Table 1.

When the study was complete, inter-observer agreement was calculated in 31% of the baseline, interventions, and maintenance videos that were randomly selected and analyzed by the researcher and a graduate student. To insure reliability of data collection of the dependent variables throughout the study, inter-observer agreement was obtained at an average of 93% across all phases (see Table 1). The researcher coded 100% of all sessions (42) and the graduate student coded an average of 31% of all of the sessions (13) in the study. Inter-observer agreement was obtained in 30% of baseline sessions (7/23), 31% of the intervention sessions (5/16), and 33% of the maintenance sessions (1/3). Table 1 reports the inter-observer agreement for all the HLPs across all phases of the study. The mean total of agreement across all phases ranged from 89-97%. Proximity had the highest agreement (93-100%) and PFB had the highest range (83-100%). Overall IOA was high (baseline = 93.17%, intervention = 89.33% and maintenance = 90.21%).

Variability in IOA was accounted for by several factors. First, there were some situations when the ISTP had gone out of range of the video. The researcher heard the ISTP talking to a student and giving feedback, and the coding sheet was marked accordingly. The graduate student, however, did not mark either the instance of PFB or proximity on her coding sheet. Second, characteristics of the ISTPs played a role. There was another instance where the ISTP was at the edge of the video wearing black. A hand

can be seen moving, within range of students. Again, the researcher counted the ISTP as having proximity, and the graduate student did not.

Table 1

Mean Percentages for Inter-Observer Agreement for Dependent Variables Across All Phases

Phase	Prox %	Prox Range %	OTR %	OTR Range %	PFB%	PFB Range %
Baseline	93	89-96	88	83-90	91	83-100
Intervention	99	97-100	89	86-95	88	84-91
Maintenance	100	100	91	91	100	100
Mean across phases	97		89		93	
Mean across study						93

Note. Prox = Proximity; OTR = Opportunities to Respond; PFB = Positive Feedback

Training fidelity of coach. Prior to coaching teachers to use HLPs, the researcher observed the instructional coach as she demonstrated BIE coaching techniques during recorded coaching sessions. These recorded coaching sessions were performed with a teacher at the school who was not an ISTP in the study. The researcher used the recording form shown in Figure 5 to train the instructional coach. Specifically, the form shown in Figure 5 was used to record instances of coaching and 'opportunities to coach' within the response categories shown on the form during 30-second increments. Fidelity of coaching was measured by observing if the coach: (a) recognized opportunities to coach, and (b) offered the appropriate prompt to the teacher. For instance, a student in the video was observed tapping the person next to him during direct instruction, and therefore might have benefited from teacher proximity. Because the coach offered the

prompt “prox, Joe,” the researcher wrote on the sheet, “Joe tapping on Mary during DI.” Next, the researcher put a tally in the proximity column.

The blue oval in the “for office use only” column was marked for each 30-second increment of coaching if all ‘opportunities to coach’ were correctly executed. If the coach did not give the prompt, it was noted and the blue oval was not marked. When the “no opportunity to coach” column was marked if the teacher was still giving instructions for an OTR, or the students were still responding to the prompt during the entirety of the 30-second increment, the blue oval was marked. The goal was for the coach to be able to correctly offer coaching on 80% of coaching opportunities, as measured by the researcher. This meant at least eight of the ten blue ovals were marked (indicating correct coaching was offered if an opportunity was available) in order to reach this target. The researcher recorded all instances of coaching opportunities, and missed opportunities in the training. The coach initiated all expected coaching prompts in all three training sessions. A graduate student performed inter-observer agreement (IOA) on 30% of these sessions (1/3). The graduate student who watched the training video and used the same recording sheet used by the researcher performed this IOA. Three consecutive five-minute sessions of 80% were required before the school district’s coach started the coaching intervention. The coach and the graduate student were in 100% agreement on the training video.

Date:	Time:		Participant:	Coach:			
Coding	Subject:		Saved as:	High Leverage Practices			
Office Use Only	seconds	(+ or -)	Coaching comments made to participant	OTR	PBSF	Proximity	No Opportunity
	30						
	60						
	90						
	120						
	150						
	180						
	210						
	240						
	270						
	300						

Figure 5. Recording Form to be Used While Training the Coach

Fidelity of implementation of coaching statements during intervention (independent variable). Fidelity measures included two phases. First, fidelity was tracked to answer whether the coach recognized when there was an opportunity to coach a specific HLP. Next, fidelity was ascertained using the following question specific to certain HLPs:

(1) Did the coach provide prompts for proximity when there was a clear opportunity to do so (if the coach was sitting at desk, the coach can prompt "class, prox")?

(2) Did coach provide a prompt for proximity when teacher needed to address student misbehavior?

(3) Did the coach provide prompts for OTR when there was a clear opportunity to do so (if an explanation was made about using a hundreds chart to add ten, the coach can prompt "class, OTR on hundred's charts")?

(4) Did the coach provide prompts for PFB when there was a clear opportunity to do so (after teacher gave an OTR or PFB unrelated to an OTR)?

The researcher coded all sessions for missed coaching opportunities. Fidelity for coaching prompts was calculated using a formula where the number of yes responses/ total number of coaching opportunities (Kennedy, 2005). The researcher found that the coach correctly offered coaching prompts 85% of all coaching opportunities across all participants (see Table 2). The missed opportunities were with the first ISTP in the first two sessions of the study. These missed opportunities were likely because the coach was reluctant to interrupt the ISTP while she was giving direct instruction. To ensure fidelity of the intervention of coaching via BIE, the researcher coded the video on a nightly basis and spoke with the coach about these missed opportunities (Horner, Rue, & Torres, 2005). There were no instances of missed coaching opportunities in subsequent sessions.

Table 2

Fidelity of implementation of coaching statements (independent variable).

Intervention	Prox %	OTR %	PFB %	Mean %
Abby	80	100*	33	56
Becky	100	100*	100*	100
Carrie	100	100	100*	100
Overall	97	100	78	85

Note: * = there was no need for coaching

Social Validity

Foster and Mash (1999) discussed the importance of assessing the, "acceptability of the treatment procedures and goals" (p. 309) in treatment and outcome studies. To this end, a survey was given to the ISTPs and the coach upon completion of the study. All three of the teachers responded, as well as the instructional coach, who filled out a survey

for each of the ISTPs. Questions 1-4 in both surveys were framed using a Likert scale response with '1' being least favorable to '10' being most favorable. An extended response was only requested on the first and the fifth questions. Both surveys were modified from social validity questions used by Scheeler, Bruno, Grubb, and Seavey (2009), and included the following questions:

1) Did you like being coached via BIE? Why or why not?
2) What was your comfort level?
3) Would you feel comfortable coaching a peer if given the opportunity?
4) How would you say the use of HLP changed the behavior of the students in the classroom?
5) Is there anything you would like to add so our researchers can continue to learn from this study?

The coach survey was also modified from a questionnaire created by Scheeler, et al. (2009) and used the same Likert-rating scale:

1) Did you like coaching via BIE? Why or why not?
2) What was your comfort level?
3) How would you say the use of HLP changed the behavior of the students in the classroom?
4) How would you say the use of BIE changed the behavior of the teachers in the study?
5) Is there anything you would like to add so our researchers can continue to learn from this study?

Teachers' comments about what they noticed in regards to student behavior were analyzed and discussed by themes as part of the effectiveness and social validity aspect of this study.

Research Design

The four research questions were examined using a multiple baseline across participants single subject research (SSR) design (Kennedy, 2005). The multiple-baseline across participants design allows researchers to establish experimental control by introducing the intervention "across different points in time" (Kratochwill et al., 2010, p. 2).

A multiple baseline across participants design was appropriate for this research study because the intervention of coaching via BIE could easily be administered to the ISTPs in staggered conditions (Kennedy, 2005). The treatment, BIE coaching, began for one ISTP while the other ISTPs remained in baseline. Once the first ISPT had five baseline sessions the intervention began (Kratochwill et al., 2010).

Cessation of the intervention was determined by using visual analysis discussed in the data analysis section below (Kennedy, 2005). There were two caveats for cessation of the intervention: (a) an ISTP used proximity during all 30 of the 20-second intervals (100%) for three consecutive observation sessions; and (b) the ISTP's data showed at least three points above the baseline mean in the other two HLPs (OTR and PFB).

Once the first ISPT's intervention ceased, the intervention began for the second ISTP. Analyzing and plotting data extracted from the observations of the videos following each implementation session determined cessation. The second ISTP also received intervention until they demonstrated: (a) use of proximity during all 30 of the

20-second intervals (100%) for three consecutive observation sessions; and (b) at least three points above the baseline mean in the other two HLPs (OTR and PFB). Similarly, the third ISTP followed the same protocol. Thus, data was taken each day to distinguish differences in treatment between the teachers in intervention versus teachers that were simultaneously in baseline conditions (Kennedy, 2005; Kratochwill et al., 2010). Inconsistent implementation of the multiple baseline design and lack of stability across all three HLPs will be discussed in limitations.

Maintenance

Five to seven weeks after the final intervention session for each ISTP the coach recorded a ten to twenty-minute session, during the same instructional time of day (math) as was used previously. This strategy was used to garner the degree to which the ISTPs continued their use of previously identified HLPs in their classrooms after the intervention was removed. The coach did not administer any verbal commands to the ISTP nor did the ISTP wear a Bluetooth device.

Data Analysis

The use of graphic displays of the data was visually analyzed throughout the study. Graphs lend themselves well to single subject research because they can be used to explore, visualize, and explain variability in behavior (Kennedy, 2005). Specifically, all data were plotted, and visually inspected each day during data collection for each of the target HLP behaviors (Horner, Carr, Halle, McGee, Odom, & Wolery, 2005). Means for each of the HLPs were also calculated and reported in tabular format.

Chapter IV: Results

The purpose of this study was to determine if instructional coaching via bug-in-the-ear (BIE) technology following a traditional professional development (PD) increased the use of high leverage practices (HLP) by three teachers. The researcher used a multiple baseline across participants design. Additionally, this researcher collected social validity data via a Likert-scale survey as well as open-ended response questions to determine the extent to which instructional coaching via BIE technology was an appropriate way to help teachers increase their use of high-leverage practices.

Of the forty-two 10 minute coaching sessions during math instruction, twenty-three were baseline sessions, sixteen were intervention sessions, and three were maintenance sessions. A pseudonym beginning with the letters A, B, and C identified the ISTPs (Abby, Becky, and Carrie) in order of the coaching schedule. All sessions were recorded and saved with ISTP initial, date of recording, phase and session number.

The results have been organized by research question. Questions one, two, and three have discussed the individual HLPs results. Question four will be discussed throughout the discussions of research questions one through three. Finally, the data collected pertaining to social validity were presented, as well as a summary and discussion of the ISTP and coach responses. To examine ISTP use of HLPs the mean percentages for all phases (baseline, intervention, and maintenance) were reported in Tables 3, 4 and 5. The results for baseline, intervention and maintenance were graphically displayed for each ISTP in Figures 6, 7, and 8. The X-axis represents the observational data sessions and the Y-axis represents the percentage of HLP offered out of 30 opportunities (every 20 seconds for 10 minutes). Trendline for baseline and mean were

included on each graph. The linear trendline was calculated using the Excel trend function (Excelfunctions.net, 2016). The formula used by Excel was y = m * x + b, where m = the correlation (y, x) and b = constant (y, x).

Research Question 1

Does a group-based professional development followed by BIE coaching increase the use of proximity in classroom environments? During baseline, the mean percentage of proximity for Abby was 68%. Becky and Carrie showed higher rates of proximity in baseline (88% and 84% respectively). A visual analysis for proximity in baseline showed ascending trend lines for all ISTPs (see Figure 6). After the introduction of the coaching via BIE intervention all three ISTPs data was measured at 100% of observed intervals. Abby had increased proximity to 100% of observed intervals during her fifth and final baseline session prior to the intervention being introduced. Becky had increased to 100% in the first, fourth and seventh baseline sessions. Carrie was observed achieving 100% during the second, seventh, tenth and eleventh baseline sessions. Only Becky maintained her intervention mean (100%). Abby and Carrie had maintenance scores slightly lower than intervention mean (93% each).

Table 3

Mean Percentages Across Phases for Proximity

ISTP	Baseline %	Intervention %	Maintenance %
Abby	68	100	93
Becky	88	100	100
Carrie	84	100	93

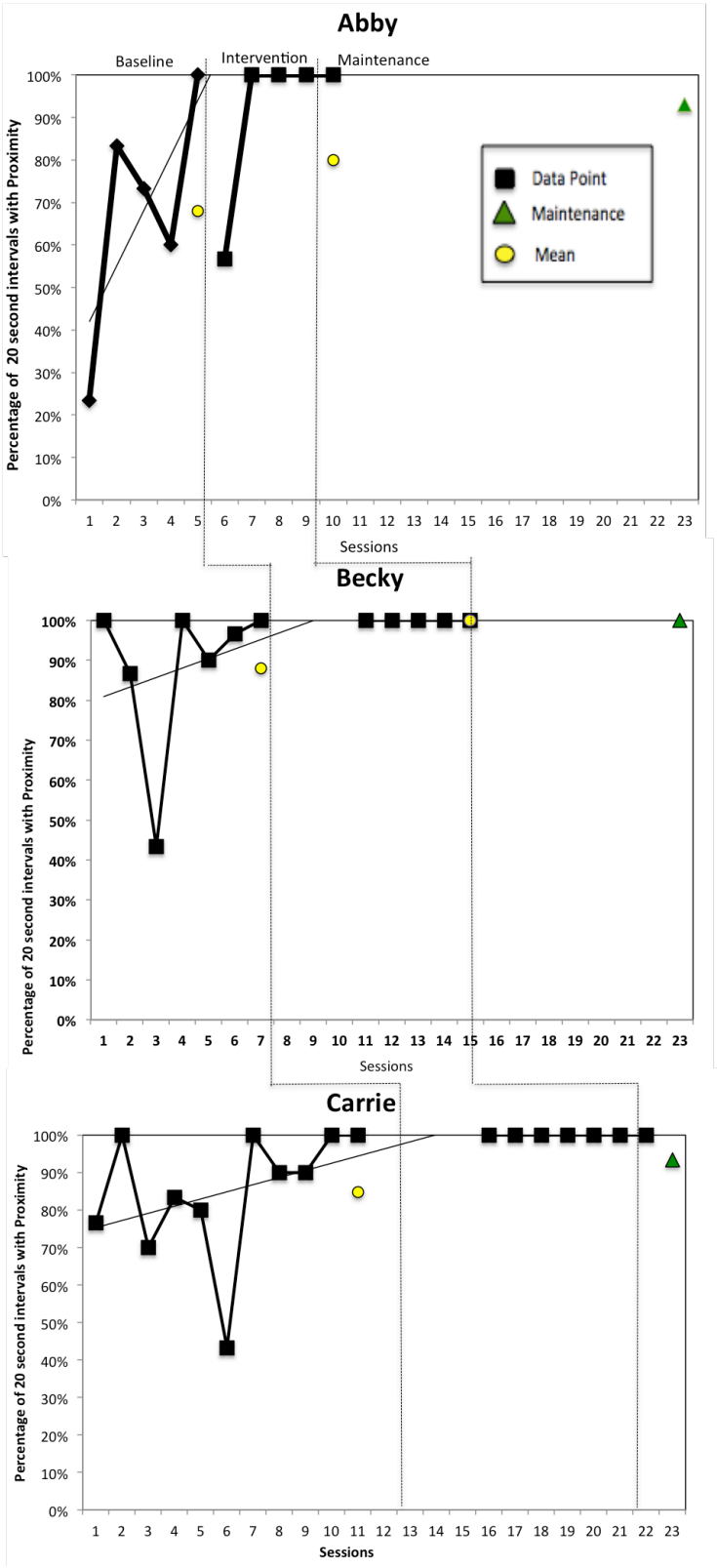


Figure 6. ISTPs' Data on Intervals of Proximity per 10-Minute Sessions Across Phases

All three of the ISTPs showed ascending baseline trends, achieving 100% of observation intervals exhibiting proximity prior to introduction of the intervention. The visual analysis showed that for all three ISTPs, their use of proximity measured at 100% at some point during intervention. During the maintenance probe, five to seven weeks after the intervention was removed, the level of proximity for both Abby and Carrie decreased to 93%, while Becky maintained 100%.

Research Question 2

Does a group-based professional development followed by BIE coaching increase the use of opportunities to respond in classroom environments? During baseline, the mean percentage of OTR was highest for Abby at 46%. Becky and Carrie showed lower rates of OTR with 39% and 38% respectively. A visual analysis for OTR in baseline indicated erratic and unstable baselines, with perhaps descending trendlines for Abby and Carrie and a slight ascending trendline for Becky (see Figure 7).

Table 4

Mean Percentages Across Phases for Opportunities to Respond

ISTP	Baseline %	Intervention %	Maintenance %
Abby	46	52	30
Becky	39	51	40
Carrie	38	59	50

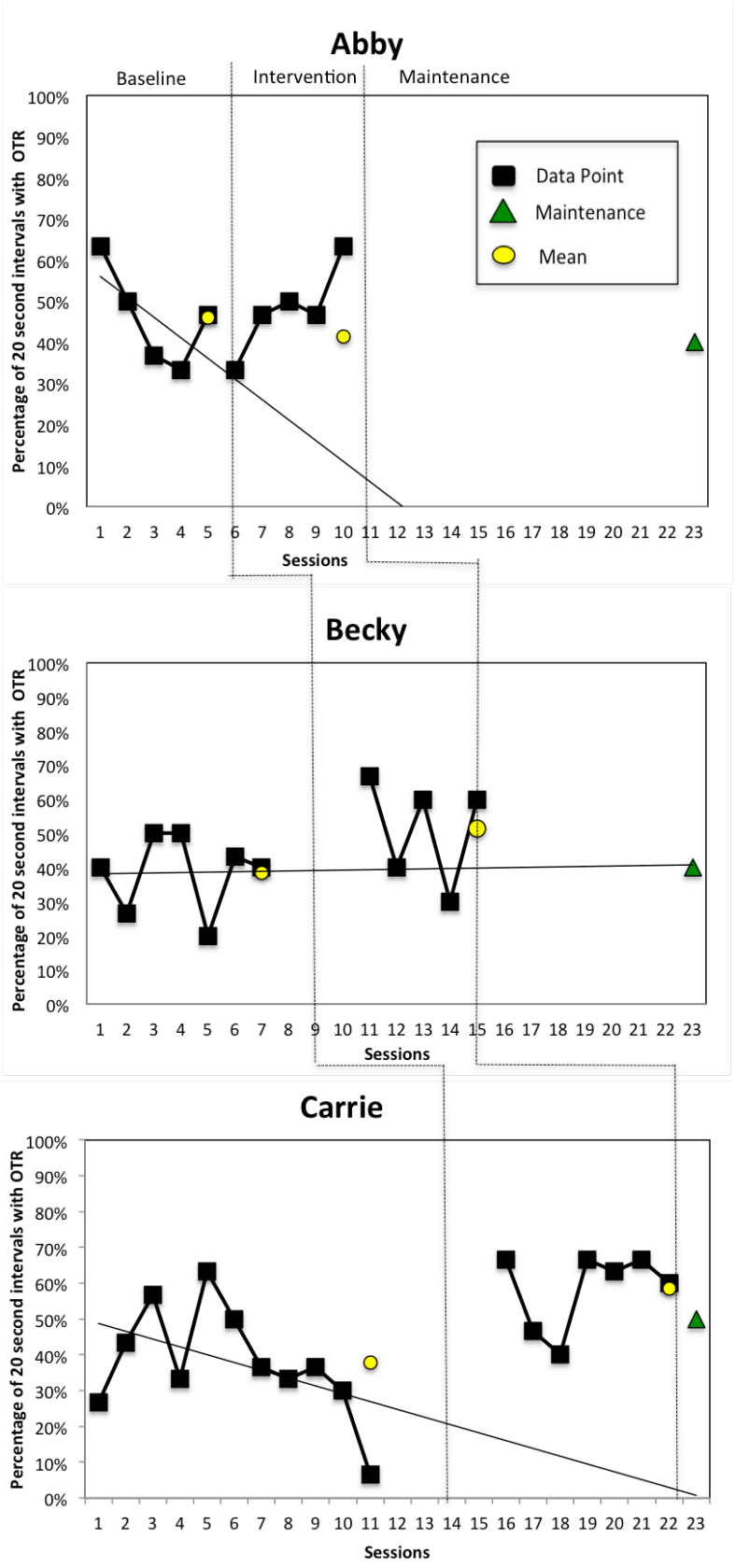


Figure 7. ISTPs' Data on Intervals of OTR per 10-Minute Sessions Across Phases

All three of the ISTPs showed some improvement of the use of OTR during the intervention phase, however, the data points were unstable. During the maintenance check, five to seven weeks after the intervention was removed, the level of OTR for Becky decreased 20%, and for Carrie 10%. The level for Abby decreased below baseline levels.

Research Question 3

Does a group-based professional development followed by BIE coaching increase the use of positive feedback in classroom environments? During baseline, the mean percentage of PFB was highest for Becky at 38%. Abby and Carrie showed lower rates of OTR with 17% and 23% respectively. A visual analysis for OTR in baseline showed unstable baselines with possibly descending trendlines for Abby and Carrie, and an ascending trendline for Becky (see Figure 8).

Table 5

Mean Percentages Across Phases for Positive Feedback

ISTP	Baseline %	Intervention %	Maintenance %
Abby	17	28	13
Becky	38	69	67
Carrie	23	47	27

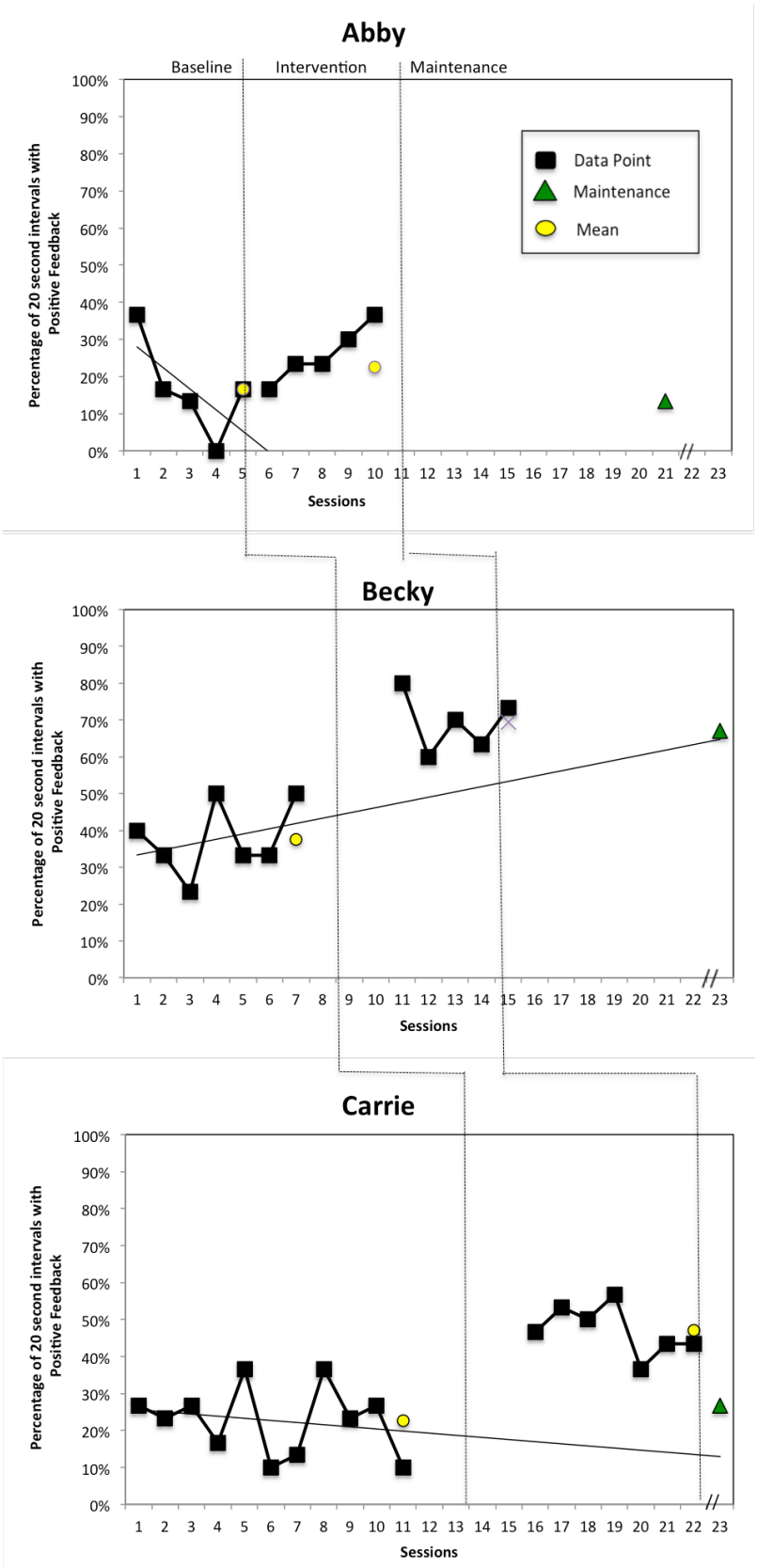


Figure 8. ISTPs' Data on Intervals of PFB per 10-Minute Sessions Across Phases

All three of the ISTPs showed some improvement of the use of OTR during the intervention phase. Abby's overall percentages of HLP delivery of PFB were the lowest of all of the ISTPs in all three phases of the study (baseline, intervention, and maintenance) with here maintenance lower than her baseline (decreased by 4%). Becky's level of OTR was very close to her intervention mean (decreased by 2%). Carrie decreased significantly (decreased by 20%).

Social Validity Survey

Teacher survey. *What is the perceived social validity of basic group instruction followed with individual BIE coaching from the teacher's perspective?* To examine ISTP experiences of coaching via BIE each survey question was reported with the Likert scale range and mean (see Table 6). The extended responses were analyzed by finding common themes and reported below.

Table 6

Teacher Survey Questions with Mean and Range

Teacher Survey Questions	Mean of Scaled Response 1 (least favorable) – 10 (most favorable)	Range
Did you like being coached via BIE?	6.67	6-7
What was your comfort level?	8	7-9
Would you feel comfortable coaching a peer if given the opportunity	6	5-8
How would you say the use of HLP changed the behavior of the students in the classroom?	6.33	5-8
Is there anything you would like to add so our researchers can continue to learn from this study?	No scaled response requested	No scaled response requested

The survey questions assessing the acceptability of increasing HLP via BIE coaching were given to the teachers after the cessation of all phases of the study for Abby and Becky. Carrie received the survey after her baseline and intervention, but before her maintenance probe. To examine the teachers' experiences of being coached via BIE, responses for each survey question were reported which include the Likert scale range, '1' being least favorable to '10' being most favorable. There were four scaled survey questions, used to gauge ISTP perceptions of receiving coaching via BIE (Scheeler et al., 2009). The ISTP responses were collected and a mean was calculated.

Three overall themes emerged in analysis of the ISTPs responses. One theme was positive in nature and referred to classroom management. Becky liked having someone in her room helping her monitor the classroom helped keep her alert. Carrie thought BIE

coaching would have merit for newer teachers or teachers needing help with classroom management. Abby suggested a focus on one area of concern.

A second theme was also positive in nature and referred to classroom environment and student change. Abby did not respond to this question but scored it with a 3. Becky scored this an 8 and stated that her energy and use of positive feedback led to better student attitudes. Carrie also scored this as an 8 and said that the students responded to a positive classroom environment and were more engaged and eager to please.

The third theme consisted of frustration with the technology. Two of the ISTPs used statements such as the BIE being distracting and overwhelming. Becky stated she did not like the issues with technology connectivity. Although the score for comfort was high, Abby mentioned the amplification of small noises through the Bluetooth was distracting to her. Becky stated that the noises of the FaceTime were sometimes distracting to the students. Becky would not feel comfortable with the technology when asked if she would like to coach.

Coach survey. *What is the perceived social validity (Foster & Mash, 1999) of basic group instruction followed with individual BIE coaching from the coach's perspective?* To examine coach experiences of coaching via BIE each survey question was reported with the Likert scale range and mean (see Table 6). The extended responses were analyzed by finding common themes and reported below.

Table 7

Coach Survey Questions with Mean and Range

Coach Survey Questions	Mean of Scaled Response 1 (least favorable) – 10 (most favorable)	Range
Did you like coaching via BIE?	8.33	8-9
What was your comfort level?	8.33	8-9
How would you say the use of HLP changed the behavior of the students in the classroom?	3.33	2-5
How would you say the use of BIE changed the behavior of the teachers in the study?	3.33	2-5
Is there anything you would like to add so our researchers can continue to learn from this study?	No scaled response requested	No scaled response requested

Similarly, the coach's scaled responses were also examined. The coach also reported the similar themes evident in the ISTPs surveys. The first theme was positive in nature and referred to teacher and student behaviors. The coach did notice that when Carrie's behaviors changed (i.e. increase in HLP) student behavior improved. Carrie had the most perceived change in behavior and was also more aware of her students and their participation levels. The coach reported that Becky seemed more aware of her surroundings, though her actual change in behavior was perceived as low.

The second theme was negative in nature and referred to teacher behaviors. When asked about noticing a change in student behavior, the coach did not notice a marked change in either Abby's or Becky's students. She attributed this to her perceived high level of classroom management techniques already in place before the study. She also stated that Abby was unwilling to increase her rate of PFB. Her comments stemmed from

a conversation between herself and Abby during the intervention, discussing feedback since that was Abby's biggest need for improvement. Abby stated that she was comfortable with her teaching and she did not feel the need to change it. Abby explained that her expectations for her students were very high therefore she did not think it appropriate to give the students praise for every little thing they did.

The final theme was technology. Although the coach liked coaching via BIE in the past, this particular experience was frustrating since there were connectivity issues interfering with the ISTPs opinion of the technology, discussed further in the limitations section.

Chapter V: Discussion

This chapter offers a brief summary of the study as well as further discussions of the findings. Also included in this chapter were limitations of the study, implications for future research, and implications for practice, followed by concluding statements.

Purpose of the Study

A lack of self-efficacy related to classroom management skills has been cited as one of the highest rated reasons teachers leave the field (Aloe, Amo, & Shanahan, 2014; Brouwers & Tomic, 2000; Elford 2013; Skaalvik & Skaalvik, 2010; Tschannen-Moran & Hoy, 2001). Aloe et al. (2014) examined self-efficacy of classroom management skills in relation to teacher burnout and concluded that teachers with high levels of self-efficacy of classroom management skills were less likely to experience burnout. Increasing the use of effective classroom management skills that include the use of HLPs such as proximity, OTR, and PFB, not only decreases teacher burnout, but also increases teacher sense of self-efficacy (Reinke et al., 2009; Skinner, et al., 1997).

Since PD curricula and content can be difficult to grasp in a one-day workshop (Barton, Chen, Pribble, Pomes, & Young-Ah, 2013; Klinger, 2004; Klinger, Boardman, McMaster, 2013; Scheeler, Ruhl, & McAfee, 2004) instructional coaching via BIE followed the PD as a means to embed the activity into the daily instructional routines of the ISTPs (Graner et al., 2012). The purpose of this study was to expand the research on coaching via BIE supplemental to PD to increase the HLPs including proximity, OTR, and PFB.

This study investigated one strategy to support teachers in the use of three specific HLPs (proximity, OTR, PFB) to increase their self-efficacy and improve classroom

management through instructional coaching. The effects of basic group instruction in the form of PD, followed by instructional coaching via bug-in-the-ear (BIE) technology on in-service teacher's use of high leverage teaching practices (HLP) was examined using a multiple baseline across participants design. The dependent variables were the practices targeted for measurement: opportunities to respond (OTR), proximity, and positive feedback (PFB). The independent variable was coaching delivered via BIE. Succinct phrasing was used in order to coach teachers to increase the target HLPs while the teachers were in the act of teaching. Additionally, to explore the social validity of the study the ISTPs were asked to rate their experience through both Likert-scale and open-ended responses.

Discussion of Results

Had the design of this study included a baseline phase preceding the professional development, more conclusive results could have emerged. However, the results of the present study were inconclusive because of the design flaws mentioned below in the limitations. With this key caveat in mind, findings are discussed.

Proximity. The first research question dealt with whether a group-based professional development followed by BIE coaching increased the use of proximity in classroom environments. Data were collected from all phases of the study and analyzed to determine if the PD followed by the coaching delivered via BIE increased the use of teacher proximity. The visual analysis shows that when comparing the intervention phase with baseline phase, ISTPs use of proximity was high, but a functional relationship could not be established. The results were inconclusive, given that all three ISTPs reached 100% of 1-2 observed intervals during baseline. Providing the training before

baseline behaviors were measured might account for the high levels of proximity observed during baseline (Kennedy, 2005). The high levels of proximity across all phases demonstrate the importance of choosing an appropriate research design that would enable the results to be attributed to the professional development, the intervention or the teacher's previous teaching techniques.

Opportunities to respond. The second research question dealt with whether a group-based professional development followed by BIE coaching increased the use of OTR in classroom environments. All three of the ISTPs showed some improvement of the use of OTR during the intervention phase. The visual analysis shows that when comparing intervention phase with an unstable baseline phase, ISTPs increased their use of OTR. The improvement for Carrie was over 20% higher than baseline, however a functional relationship cannot be drawn due to lack of fidelity in adhering to established procedures for multiple baseline methods.

Positive feedback. The third research question dealt with whether a group-based professional development followed by BIE coaching increased the use of PFB in classroom environments. All three of the ISTPs showed some improvement of the use of PFB during the intervention phase. The visual analysis shows that when comparing the intervention phases with baseline phases, ISTPs increased their use of PFB. Abby's overall percentages of HLP delivery of PFB were the lowest of all of the ISTPs in all three phases of the study (baseline, intervention, and maintenance). Becky had no overlap in the data in PFB from baseline to intervention and Carrie only had one data point overlap (out of seven sessions). These results may be promising, however, because

of the flaws in the overall research design, a functional relationship could not be established.

Maintenance. The fourth research question dealt with whether basic group instruction followed by individual BIE coaching had any effect on HLP usage after the cessation of BIE coaching, as measured in a follow-up observation. During the maintenance check, five to seven weeks after the intervention was removed, the level of proximity for both Abby and Carrie decreased only slightly (7%) while Becky remained at the intervention level of 100%.

Carrie maintained the highest levels of OTR out of the three ISTPs. Carrie's maintenance level dropped to midway between her baseline and intervention scores. The level of Becky's OTR decreased to be only slightly above baseline levels. The level for Abby decreased below baseline levels.

Becky's PFB results were by far the most positive of this study. Her level of PFB in maintenance was slightly lower than her intervention mean, which was almost 30% higher than baseline. Carrie had a maintenance only slightly higher than her baseline mean. Abby's maintenance of PFB dropped to below her baseline mean.

Social Validity. All of the ISTPs were in agreement regarding the comfort of using BIE as a means to receive coaching. They reported various comfort levels using the technology and suggested future coaching with BIE should focus on teacher-identified needs. The coach reported frustration with the technology. She also suggested using a code word and modeling during instruction. She reported that she was comfortable coaching only two of the ISTPs.

Limitations

Other design flaws such as not having a true baseline and too much variability in the three HLPs were also discussed. Several issues dealt with the actual methods of the study and others related to unexpected issues such as technology (i.e. connectivity and placement).

Training of HLPs before baseline. As an incentive for Sugar Hill School District to allow a study to occur, this researcher offered a professional development on HLPs to any teacher who wanted to attend. Because the PD for HLPs occurred before baseline data were collected, this may be a factor likely attributing to the overall inconclusive results. If replicated these steps phases should be present: (a) baseline data should be collected before the PD, (b) PD should be administered, (c) PD should be followed by a distinct data collection phase, and then (d) the BIE intervention phase.

Design flaws and variability. A more appropriate choice of design would have been multiple-baseline across behaviors design (Kennedy, 2005). The introduction of three measured behaviors at once was not appropriate and could probably account for some variability of the data. Although proximity and PFB seemed stable according to visual analysis, OTR was not and therefore made the movement from one ISTPs intervention to another a design flaw. In addition, decisions about when to move from baseline to intervention phases were arbitrary, and in the case of proximity, occurred because all three participants had reached 100% in at least one session while still in baseline.

Technology issues. There were some notable technical issues. One issue was that the school where the study was implemented had several different Wi-Fi zones in the

building. The coach traveled between zones after she placed the technology in the classroom to get to her own room or the closet between classrooms to coach. Several times this ended the Internet connection required for the call between the coach's computer and the iPad, in the ISTPs classroom. The coach then went back into the classroom to reestablish a connection. As mentioned in the teacher survey, this was frustrating for the ISTP to have this interruption of her lesson. Other times the computer refused to accept the FaceTime call if, for instance the weather was cloudy. On two occasions a call had to be reestablished two or three times in order for the coach to ensure there were 10-minutes of coaching. There was actually only one instance where two videos were coded for one session. On two occasions a call could not be reestablished at all and the coaching session was cancelled. These technology issues were frustrating for the researcher, the instructional coach and one of the ISTPs, as discussed in the social validity section.

Another issue with the technology was the placement of the iPad in the classrooms. In order to see all of the students in the classroom, the iPad had to be placed high up on a shelf, making it more difficult for the coach to establish or re-establish the calls. As mentioned above, if a call needed to be re-established, the coach re-entered the classroom where she had to climb on a desk to reach the iPad and possibly disrupt instruction.

Participants' relationship to each other. Since all of the ISTPs were at the same school they knew each other and knew they were all participating in the study. This might have had an impact on their behavior in the study.

Implications for Future Research

Future research should include the introduction of one HLP or area of concern at a time. This will allow a functional relationship to be drawn between the intervention and an increase, if any, of the particular HLP (Kennedy, 2005). This could occur in a multiple-baseline across behaviors design (Kennedy, 2005).

Future research should also include teachers who are in need of support as well as teachers who use HLPs regularly in order to examine effects across a variety of participants. Limiting the HLPs to the specific needs of the teacher could also show great effect. For instance, perhaps teachers should be coached on the area of their greatest concern, as Abby suggested in her teacher survey.

Scheeler and Morano (2016) used fading in order for the intervention to become more of a habit to the participants. This study would lend itself well to fading, where, during an additional phase the ISTP could wear the Bluetooth, in subsequent phases they could put the Bluetooth on next to them at their work station, then faded to a picture of the device on the wall, eventually faded to a picture of a bug, or no cue at all.

Implications for Practice

One way to improve self-efficacy is to have the ISTPs watch their own sessions and go over the data daily in order to be able to witness their growth and provide insights into their thinking about their teaching. Self-efficacy was one of the driving forces in this study, but it was not investigated as the study was being conducted.

All school districts might not have daily access to an instructional coach. This particular coach was serving all three elementary schools until this year when she was moved to serve only one school. As a consequence, all schools interested in applying a

coaching strategy using BIE may need to identify other personnel who could provide training. This could include peer mentors (Scheeler et al., 2010) and administrators (Mandeville & Rivers, 1991).

Administrators could use this intervention to give more concrete feedback to their staff. Having a video and data to share with the teachers could allow more academic discussions about what is happening in the classrooms. Another way administrators and special education teachers in supervisory roles could use this intervention is with paraprofessionals. Giangreco, Suter, and Doyle's (2010) review on paraprofessionals suggests there is a continual need for available and adequate training. Instructional coaching via BIE could help meet this need. As Scheeler and Morano (2016) recently reported, paraprofessionals can greatly benefit from this intervention. Special education teachers may have several paraprofessionals under their guidance; this intervention could help paraprofessionals increase delivery of HLPs to students with disabilities.

Conclusion

Previous research has shown that one day PD was not effective in changing teacher behaviors (Barton, et al., 2013; Klinger, 2004; Klinger et al., 2013; Scheeler et al., 2004). This study did show that some changes in certain behaviors occurred after the intervention of BIE coaching was administered. However, the results remain inconclusive and cannot be attributed to the intervention in light of the design flaws. With no true baseline before implementation of the PD followed by the implementation of the intervention (coaching via BIE), a functional relationship cannot be shown.

The social validity responses from the instructional coach and the ISTPs indicate positive attitudes about the use and comfort of coaching via BIE. The Internet

connection was also a major theme and frustrated the study participants. The findings also indicate further research is required to determine to what extent BIE coaching could be used as an effective intervention for increasing HLPs in teachers.

References

Albers, A. E., & Greer, R. D. (1991). Is the three-term contingency trial a predictor of effective instruction? *Journal of Behavioral Education*, *1*, 337-354. doi:10.1007/bf00947188

Aloe, A. M., Amo, L. C., & Shanahan, M. E. (2014). Classroom management self-efficacy and burnout: A multivariate meta-analysis. *Educational Psychology Review*, *26*, 101-126. doi: 10.1007/s10648-013-9244-0

Ball, D. L., & Forzani, F. M. (2011). Building a common core for learning to teach: And connecting professional learning to practice. *American Educator*, *35*, 17-21. doi: 10.1002/trtr.1386

Ball, D. L., Sleep, L., Boerst, T. A., & Bass, H. (2009). Combining the development of practice and the practice of development in teacher education. *The Elementary School Journal*, *109*, 458-474. doi: 10.1086/596996

Barton, E.E., Chen, C.I., Pribble, L., Pomes, M. & Young-Ah, K. (2013). Coaching preservice teachers to teach play skills to children with disabilities. *Teacher Education and Special Education*, *36*, 330-349. doi: 10.1177/0888406413505113

Beaman, R., & Wheldall, K. (2000). Teachers' use of approval and disapproval in the classroom. *Educational Psychology*, *20*, 431-446. doi:10.1080/713663753

Brouwers, A., & Tomic, W. (2000). A longitudinal study of teacher burnout and perceived self-efficacy in classroom management. *Teaching and Teacher Education*, *16*, 239-253. doi:10.1016/S0742-051X(99)00057-8

Cavanaugh, B. (2013). Performance feedback and teachers' use of praise and opportunities to respond: A review of the literature. *Education and Treatment of Children*, *36*, 111-136. doi:10.1353/etc.2013.0001

Clunies‐Ross, P., Little, E., & Kienhuis, M. (2008). Self‐reported and actual use of proactive and reactive classroom management strategies and their relationship with teacher stress and student behaviour. *Educational Psychology*, *28*, 693-710. doi: 10.1080/01443410802206700

Colvin, G., Flannery, K. B., Sugai, G., & Monegan, J. (2009). Using observational data to provide performance feedback to teachers: A high school case study. *Preventing School Failure: Alternative Education for Children and Youth*, *53*, 95-104. doi: 10.3200/PSFL.53.2.95-104

Conroy, M. A., Asmus, J. M., Ladwig, C. N., Sellers, J. A., & Valcante, G. (2004). The effects of proximity on the classroom behaviors of students with autism in general education settings. *Behavioral Disorders*, *29*, 119-129. Retrieved from http://www.jstor.org/stable/23889445

Cook, B. G., & Cook, S. C. (2013). Unraveling evidence-based practices in special education. *The Journal of Special Education*, *47*, 71-82.

Cossairt, A., Hall, R., & Hopkins, B. L. (1973). The effects of experimenter's instructions, feedback, and praise on teacher praise and student attending behavior. *Journal of Applied Behavior Analysis*, *6*, 89-100. doi: 10.1901/jaba.1973.6-89

Coulter, G. A., & Grossen, B. (1997). The effectiveness of in-class instructive feedback versus after-class instructive feedback for teachers learning direct instruction

teaching behaviors. *Effective School Practices*, *16*, 21-35. doi:10.1007/978-1-4020-2739-0_16

Dicke, T., Elling, J., Schmeck, A., & Leutner, D. (2015). Reducing reality shock: The effects of classroom management skills training on beginning teachers. *Teaching and Teacher Education*, *48*, 1-12. doi:10.1016/j.tate.2015.01.013

Duchaine, E. L., Jolivette, K., & Fredrick, L. D. (2011). The effect of teacher coaching with performance feedback on behavior-specific praise in inclusion classrooms. *Education and Treatment of Children*, *34*, 209-227. doi:10.1353/etc.2011.0009

Duchnowski, A. J., Kutash, K., Sheffield, S., & Vaughn, B. (2006). Increasing the use of evidence-based strategies by special education teachers: A collaborative approach. *Teaching and Teacher Education*, *22*, 838-847. doi:10.1016/j.tate.2006.07.005

Elford, M. D. (2013). *Using tele-coaching to increase behavior-specific praise delivered by secondary teachers in an augmented reality learning environment* (Order No. 3559157). Available from Dissertations & Theses @ University of Kansas; ProQuest Dissertations & Theses Global. (1353110650). Retrieved from http://search.proquest.com/docview/1353110650?accountid=14556

Excelfunctions.net (2016). Excel trend function. Retrieved from http://www.excelfunctions.net/Excel-Trend-Function.html

Farrell, A. C., & Chandler, D. (2008). Cooperating teacher's impressions of the whisper-in-my-ear (WIME) and traditional communication feedback methods for physical education in preservice teachers. *Education and Human development*, *2*, 1-9. Retrieved from http://www.scientificjournals.org/journals2008/articles/1353.pdf

Florida Center for Instructional Technology, College of Education, University of South Florida. (2011). Tech-ease 4 all: Creating screen recordings with QuickTime Player. Retrieved from http://etc.usf.edu/techease/4all/getting-started/creating-screen-recordings-with-quicktime-player/

Foster, S. L., & Mash, E. J. (1999). Assessing social validity in clinical treatment research: issues and procedures. *Journal of Consulting and Clinical Psychology*, *67*, 308.

Gable, R. A., & Hendrickson, J. M. Young, c. C., Shores, RE, & Stowitschek, JJ (1983). A comparison of teacher approval and disapproval statements across categories of exceptionality. Journal of Special Education Technology, 6, 15-22.

Gallucci, C., Van Lare, M. D., Yoon, I. H., & Boatright, B. (2010). Instructional coaching building theory about the role and organizational support for professional learning. *American Educational Research Journal*, *47*, 919-963. doi:10.3102/0002831210371497

Giebelhaus, C. R. (1994). The Mechanical Third Ear Device: A Student Teaching Supervision Alternative. *Journal of Teacher Education*, *45*, 365-73. doi: 10.1177/0022487194045005009

Giangreco, M. F., Suter, J. C., & Doyle, M. B. (2010). Paraprofessionals in inclusive schools: A review of recent research. *Journal of Educational and Psychological Consultation*, *20*, 41-57. doi: 0.1080/10474410903535356

Goodman, J. I., Brady, M. P., Duffy, M. L., Scott, J., & Pollard, N. E. (2008). The effects of “bug-in-ear” supervision on special education teachers' delivery of learn units.

Focus on Autism and Other Developmental Disabilities, *23*, 207-216. doi: 10.1177/1088357608324713

Graner, P. S., Ault, M. M., Mellard, D. F., & Gingerich, R. A. (2012). Effective professional development for adult learners. *Lawrence: University of Kansas Center for Research on Learning*. Retrieved from https://kuecprd.ku.edu/~kucrl/cgi-bin/white-paper-effective-professional-development-for-adult-learners.html

Greenwood, C. R., & Abbott, M. (2001). The research to practice gap in special education. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, *24*, 276-289. doi: 10.1177/088840640102400403

Grossman, P., Hammerness, K., & McDonald, M. (2009). Redefining teaching, re-imagining teacher education. *Teachers and Teaching: Theory and Practice*, *15*, 273-289. doi: 10.1080/13540600902875340

Harrison, J. R., Bunford, N., Evans, S. W., & Owens, J. S. (2013). Educational Accommodations for Students With Behavioral Challenges A Systematic Review of the Literature. *Review of Educational Research*. doi:10.3102/0034654313497517

Hattie, J. (1999). Influences on student learning. *Inaugural lecture given on August*, *2*, 1999. Retrieved fromhttp://xn--www-rp0a.teacherstoolbox.co.uk/downloads/managers/Influencesonstudent.pdf

Hattie J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77, 81-112. doi:10.3102/003465430298487

Hawkins, S. M., & Heflin, L. J. (2010). Increasing secondary teachers' behavior-specific praise using a video self-modeling and visual performance feedback intervention.

Journal of Positive Behavior Interventions, 13, 97-108. doi:10.1177/1098300709358110

Haydon, T., & Hunter, W. (2011). The effects of two types of teacher questioning on teacher behavior and student performance: A case study. *Education and Treatment of Children*, *34*, 229-245.

Haydon, T., MacSuga-Gage, A. S., Simonsen, B., & Hawkins, R. (2012). Opportunities to Respond: A Key Component of Effective Instruction. *Beyond Behavior*, *22*, 23-31.

Heart of Change. (2006). Professional services for organizational and instructional improvement. Retrieved from http://www.heartofchange.com/index.html

Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence- based practice in special education. *Exceptional Children, 71*, 165-179. doi. 10.1177/001440290507100203

Institute of Education Sciences National: Center for Education Statistics. (2014). Children and youth with disabilities. Retrieved from https://nces.ed.gov/programs/coe/indicator_cgg.asp

Joyce, B., & Showers, B. (1982). The coaching of teaching. *Educational Leadership*, *40*, 4-10. Retrieved from http://ascd.com/ASCD/pdf/journals/ed_lead/el_198210_joyce.pdf

Joyce, B., & Showers, B. (2002). Student Achievement Through Staff Development. Alexandria, US: Association for Supervision & Curriculum Development (ASCD). Retrieved from http://www.ebrary.com

Kahan, D. (2002). The effects of a bug-in-the-ear device on intra-lesson communication between a student teacher and a cooperating teacher. *Journal of Teaching in Physical Education*, *22*, 86-104.

Kale, U. (2008). Levels of interaction and proximity: Content analysis of video-based classroom cases. *The Internet and Higher Education*, *11*, 119-128. doi: 10.1016/j.iheduc.2008.06.004

Kansas Department of Education. (2006). Revised state plan for meeting highly qualified teacher (HQT) goal in No Child Left Behind. Retrieved from https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CCQQFjABahUKEwjAyrmCxdvGAhXHU4gKHbt3B8c&url=https%3A%2F%2Fwww2.ed.gov%2Fprograms%2Fteacherqual%2Fhqtplans%2Fks.doc&ei=iXulVYDiPMenoQS77524DA&usg=AFQjCNEB0rTNojz-3U4s06Cu-n-ALKAXOw&bvm=bv.97949915,d.cGU

Kansas State Department of Education, (2015). 2014-2015 District attendance rate by type and gender: Spring Hill School District USD 230. Retrieved from http://online.ksde.org/k12/CountyStatics.aspx?org_no=D0230

Kearney, P., Plax, T. G., Richmond, V.P., & McCroskey, J.C. (1984). Power in the classroom IV: Teacher communication techniques as alternatives to discipline. In R. Bostrom (Ed.), *Communication Yearbook 8* (724-746). Beverly Hills, CA: Sage.

Kennedy, C. (2005). *Single-case designs for educational researc*h. Boston, MA: Allyn & Bacon, Inc.

Klinger, J. K. (2004). The science of professional development. *Journal of Learning Disabilities*, *37*, 248-255. doi:10.1177/00222194040370031001

Klinger, J. K., Boardman, A. G., & McMaster, K. L. (2013). What does it take to scale up and sustain evidence-based practices? *Exceptional Children*, *79*, 195-211. doi: 10.1177/001440291307900205

Knowlton, E., Wolf, H. G. Elford, M., Carter, R. & Jones, J. (April 2012). Using covert remote tele-cueing to promote generalization in general education classrooms. Denver, CO: *International Meeting of the Council for Exceptional Children.*

Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance: a historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin*, *119*, 254. doi: 10.1037/0033-2909.119.2.254

Knight, J. (2007). *Instructional coaching: A partnership approach to improving instruction*. Thousand Oaks, CA: Corwin Press.

Korner, I. N., & Brown, W. H. (1952). The mechanical third ear. *Journal of Consulting Psychology*, *16*, 81. doi: 10.1037/h0061630

Kratochwill, T. R., Hitchcock, J. H., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., & Shadish, W. R. (2010). Single-case designs technical documentation. Retrieved from http://ies.ed.gov/ncee/wwc/pdf/wwc_scd.pdf

Kretlow, A. G., Wood, C. L., & Cooke, N. L. (2009). Using in-service and coaching to increase kindergarten teachers' accurate delivery of group instructional units. *The Journal of Special Education, 44*, 234-246. doi:10.1177/0022466909341333

Landrum, T. J., Tankersley, M., & Kauffman, J. M. (2003). What is special about special education for students with emotional or behavioral disorders? *The Journal of Special Education*, *37*, 148-156. doi:10.1177/00224669030370030401

Mandeville, G. K., & Rivers, J. L. (1991). The South Carolina PET study: Teachers' perceptions and student achievement. *The Elementary School Journal*, *91*, 377-407. doi: 10.1086/461661

Maeda, J. K. (2001). Teacher coaching in physical education: A review. *Physical Educator*, *58*, 140-149.

Mesa, J., Lewis-Palmer, T., & Reinke, W. (2005). Providing Teachers with Performance Feedback on Praise to Reduce Student Problem Behavior. *Beyond Behavior*, *15*, 3-7.

Myers, D. M., & Simonsen, B. (2011). Increasing teachers' use of praise with a response-to- intervention approach. *Education and Treatment of Children*, *34*, 35–59. doi:10.1353/etc.2011.0004

Partin, T. C. M., Robertson, R. E., Maggin, D. M., Oliver, R. M., & Wehby, J. H. (2009). Using teacher praise and opportunities to respond to promote appropriate student behavior. *Preventing School Failure: Alternative Education for Children and Youth*, *54*, 172-178.

Pennington, R. C., & Courtade, G. R. (2015). An examination of teacher and student behaviors in classrooms for students with moderate and severe intellectual disability. *Preventing School Failure: Alternative Education for Children and Youth, 59*, 40-47. doi:10.1080/1045988x.2014.919141

Piwowar, V., Thiel, F., & Ophardt, D. (2013). Training inservice teachers' competencies in classroom management. A quasi-experimental study with teachers of secondary schools. *Teaching and Teacher Education*, *30*, 1-12. doi: 10.1016/j.tate.2012.09.007

Reinke, W. M., Sprick, R., & Knight, J. (2009). Coaching classroom management. In J. Knight (Ed.). *Coaching: Approaches & perspectives*, (pp. 91-112), Thousand Oaks, CA: Corwin Press.

Rock, M. L., Gregg, M., Thead, B. K., Acker, S. E., Gable, R. A., & Zigmond, N. P. (2009). Can you hear me now? Evaluation of an online wireless technology to provide real-time feedback to special education teachers-in-training. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, *32*, 64-82. doi: 10.1177/0888406408330872

Rock, M. L., Schumacker, R. E., Gregg, M., Howard, P. W., Gable, R. A., & Zigmond, N. (2014). How are they now? Longer term effects of eCoaching through online bug-in-ear technology. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, *37*, 161-181 doi: doi:10.1177/0888406414525048

Reupert, A., & Woodcock, S. (2010). Success and near misses: Pre-service teachers' use, confidence and success in various classroom management strategies. *Teaching and Teacher Education*, *26*, 1261-1268. doi: 10.1016/j.tate.2010.03.003

Scheeler, M. C., Congdon, M., & Stansbery, S. (2010). Providing immediate feedback to co-teachers through bug-in-ear technology: An effective method of peer coaching in inclusion classrooms. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, *33*, 83-96. doi: 10.1177/0888406409357013

Scheeler, M. C., & Lee, D. L. (2002). Using technology to deliver immediate corrective feedback to preservice teachers. *Journal of Behavioral Education*, *11*, 231-241. doi: 10.1023/A:1021158805714

Scheeler, M. C., Ruhl, K. L., & McAfee, J. K. (2004). Providing performance feedback to teachers: A review. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, *27*, 396-407. doi: 10.1177/088840640402700407

Scheeler, M. C., Bruno, K., Grubb, E., & Seavey, T. L. (2009). Generalizing teaching techniques from university to K-12 classrooms: Teaching preservice teachers to use what they learn. *Journal of Behavioral Education*, *18*, 189-210. doi: 10.1007/s10864-009-9088-3

Skaalvik, E. M., & Skaalvik, S. (2010). Teacher self-efficacy and teacher burnout: A study of relations. Teaching and teacher education, 26, 1059-1069. doi: 10.1016/j.tate.2009.11.001

Simonsen, B., Fairbanks, S., Briesch, A., Myers, D., & Sugai, G. (2008). Evidence-based practices in classroom management: Considerations for research to practice. *Education and Treatment of Children*, *31*, 351-380. doi: 10.1353/etc.0.0007

Simonsen, B., Myers, D., & DeLuca, C. (2010). Teaching teachers to use prompts, opportunities to respond, and specific praise. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, *33*, 300-318. doi: 10.1177/0888406409359905

Simpson, R. L., Mundschenk, N. A., & Heflin, L. J. (2011). Issues, policies, and recommendations for improving the education of learners with autism spectrum

disorders. *Journal of Disability Policy Studies*, *22*, 3-17. doi: 10.1177/1044207310394850

Skinner, C. H., Belfiore, P. J., Mace, H. W., Williams-Wilson, S., & Johns, G. A. (1997). Altering response topography to increase response efficiency and learning rates. *School Psychology Quarterly, 12*, 54-64. doi:http://dx.doi.org/10.1037/h0088947

Sprick, R., Knight, J., Reinke, W., & McKale, T. (2006). Coaching classroom management: A toolkit for coaches and administrators. Retrieved from http://search.proquest.com.www2.lib.ku.edu/docview/848782759?accountid=14556

Spring Hill Kansas. (2015). Demographics. Retrieved from http://www.springhillks.com/index.aspx?NID=214

Sutherland, K. S., Alder, N., & Gunter, P. L. (2003). The effect of varying rates of opportunities to respond to academic requests on the classroom behavior of students with EBD. *Journal of Emotional and Behavioral Disorders*, *11*, 239-248. doi: 10.1177/10634266030110040501

Sutherland, K. S., & Wehby, J. H. (2001). Exploring the relationship between increase opportunities to respond to academic requests and the academic and behavioral outcomes of students with EBD. *Remedial and Special Education*, *22*, 113-121. doi: 10.1177/074193250102200205

Sutherland, K. S., Wehby, J. H., & Copeland, S. R. (2000). Effect of varying rates of behavior-specific praise on the on-task behavior of students with EBD. *Journal of Emotional and Behavioral Disorders*, *8*, 2-8. doi:
doi: 10.1177/106342660000800101

Sutherland, K. S., Wehby, J. H., & Yoder, P. J. (2002). Examination of the relationship between teacher praise and opportunities for students with EBD to respond to academic requests. *Journal of Emotional and Behavioral Disorders*, *10*, 5-13. doi: 10.1177/106342660201000102

Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, *17*, 783-805. doi: 10.1016/S0742-051X(01)00036-1

Turnbull III, H. R., Stowe, M. J., & Huerta, N. E. (2007). *Free appropriate public education: The law and children with disabilities* (7th ed.). Denver, Colorado: Love Publishing Company.

U.S. Department of Education, NCLB: Title 1- Improving the academic achievement of the disadvantaged. (2010). *Statement of purpose.* Retrieved from http://www2.ed.gov/policy/elsec/leg/esea02/pg1.html#sec1001

U.S. Department of Education, National Center for Education Statistics. (2012). *Fast facts, teacher trends, 2012*, Retrieved from http://nces.ed.gov/fastfacts/display.asp?id=28

Voerman, L., Meijer, P. C., Korthagen, F. A., & Simons, R. J. (2012). Types and frequencies of feedback interventions in classroom interaction in secondary education. *Teaching and Teacher Education*, *28*, 1107-1115. doi: 10.1016/j.tate.2012.06.006

Wehby, J. H., Symons, F. J., & Shores, R. E. (1995). A descriptive analysis of aggressive behavior in classrooms for children with emotional and behavioral disorders. *Behavioral Disorders, 20*, 87–105. http://www.jstor.org/stable/23887504

Whitney, T., Cooper, J. T., & Lingo, A. S. (2015). Providing Student Opportunities to Respond in Reading and Mathematics: A Look Across Grade Levels. *Preventing School Failure: Alternative Education for Children and Youth*, *59*, 14-21. doi: 10.1080/1045988X.2014.919138

Zeichner, K. (2012). The turn once again toward practice-based teacher education. *Journal of Teacher Education*, *63*, 376-382. doi: 10.1177/00224871124457

Appendix A

Informed Consent for Teachers

Informed Consent for Instructional Coach

INTRODUCTION

The Department of Special Education at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You may refuse to sign this form and not participate in this study. You should be aware that even if you agree to participate, you are free to withdraw at any time. If you do withdraw from this study, it will not affect your relationship with this unit, the services it may provide to you, the University of Kansas, your school, or school district.

PURPOSE OF THE STUDY

Instructional coaching, job-embedded professional development**,** has gained momentum as a solution to provide teachers with support needed to improve instructional practice and thus, improve student achievement. Despite its potential benefits, there has been limited systematic, rigorous study of this professional development practice and its cost-effectiveness. We are conducting this study to investigate how instructional coaching helps teachers learn and use effective teaching practices and develop and refine a process that is effective, efficient, and cost-effective in the adoption of evidence-based practices.

PROCEDURES

If I agree to participate in this study, I allow my instructional coach to:

1. Collaboratively work with me to establish a student-centered instructional goal to improve the delivery of the high-leverage practices of opportunities to respond, proximity and positive behavior specific feedback..
2. Videotape me teaching a lesson, if I am not sure where to start.
3. Explain the intervention explicitly and precisely.
4. Co-develop and/or refine observation tools and/or checklists for the intervention.
5. Model the intervention in my class.
6. Collect related data by using co-developed checklists and/or observation tools to provide feedback for further improvement. This will happen as often as necessary until the goal is achieved
7. Video me using the intervention and share it with me using partnership communication skills.
8. Help determine next steps dependent upon whether the goal has or has not been attained.
9. Video our coaching sessions in order for her/him to reflect on and improve their coaching skills. **I may request that the videotaping be stopped at anytime. The researcher and his research team will collect, view, transcribe, analyze, and manage the data collected. Only individuals on the research team will have access to data.**
10. Participate in professional development through a one or two hour sessions with the researcher and instructional coach.
11. Keep a digital portfolio of work we do together as we identify instructional goals, develop implementation tools, observation protocols, etc.
12. Collect demographic information (e.g., age, teaching experience, educational degree) about me.

RISKS and BENEFITS

I understand that this method of data collection is not expected to interfere with my teaching; **this study focuses on work I am already doing with the coach. The time commitment for this study will not increase my duty time, and no time commitment outside of my regular teaching duties and responsibilities are expected.** No risks are anticipated for participating in this study. Participating in this study may help me to think about my teaching practices. I may contact the researcher to request information about the findings of this study.

PARTICIPANT CONFIDENTIALITY

PARTICIPANT CONFIDENTIALITY
My name, my teachers' names, and my school will not be associated in any publication or presentation with the information collected about him/her or with the research findings from this study. Instead, the researcher will use a pseudonym. Any identifiable information about me will not be shared unless (a) it is required by law or university policy, or (b) I give permission below for the express purpose of professional learning. Permission granted on this date remains in effect for five years after the conclusion of the study, and all data collected from this study will be destroyed 5 years after the conclusion of this study. By signing this form I give permission for the use and disclosure of my information for purposes of this study at any time in the future.

REFUSAL TO SIGN CONSENT AND AUTHORIZATION
I am not required to sign this Consent and Authorization form and I may refuse to do so without affecting my right to any services I am receiving or may receive from the University of Kansas or to participate in any programs or events of the University of Kansas.

CANCELLING THIS CONSENT AND AUTHORIZATION
I may withdraw my consent to participate in this study at any time. I have the right to cancel permission to use and disclose further information collected about me, in writing, at any time, by sending my written request to: Dr. Richard Simpson, 1122 W. Campus Rd.
Joseph R. Pearson Hall, Room 522, University of Kansas, Lawrence, Kansas 66045-3101

QUESTIONS ABOUT PARTICIPATION
Questions about procedures should be directed to the researcher listed at the end of this consent form.

PARTICIPANT CERTIFICATION:
I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to, any questions I had regarding the study. I understand that if I have any additional questions, I may call (785) 897-8447, write to the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7568, or email irb@ku.edu.

☐ By checking this box, I give my consent to use taped videos of coaching sessions I have participated in for the sole purpose of teacher and/or instructional coaching professional development and learning.

I agree to take part in this study as a research participant. By my signature I affirm that I have received a copy of this Consent and Authorization form.

_____ _____
Signature Date

Researcher Contact Information:

Heather G. Savio-Wolf
Doctoral Candidate
University of Kansas
Joseph R. Pearson Hall, Rm 522
1122 W. Campus Rd.
Lawrence, KS 66045
(816) 260-2218 Hsavio@ku.edu

Richard Simpson
Professor or Special Education
University of Kansas
Joseph R. Pearson Hall, Rm 522
1122 W. Campus Rd.
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(785) 897-8447 richsimp@ku.edu

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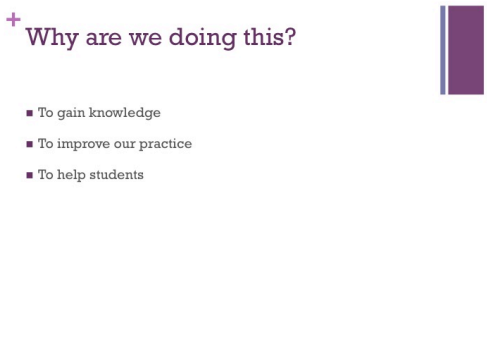
(785) 897-8447 richsimp@ku.edu

Appendix B

HLP Instructional Procedures

Slide 1



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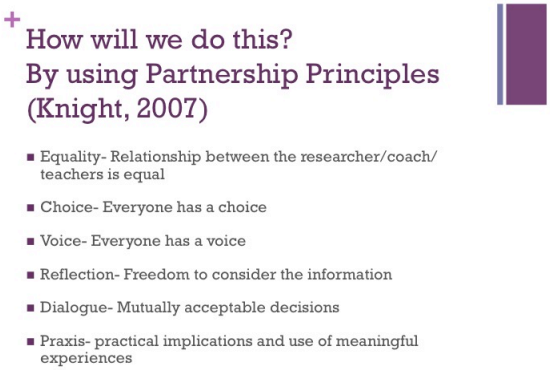

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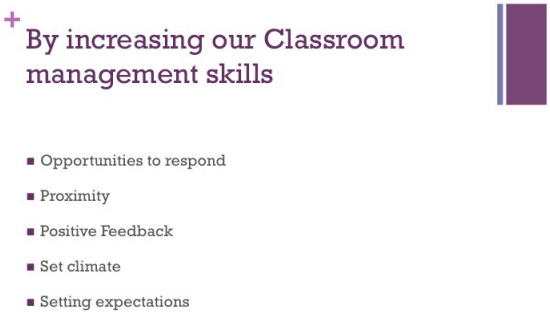

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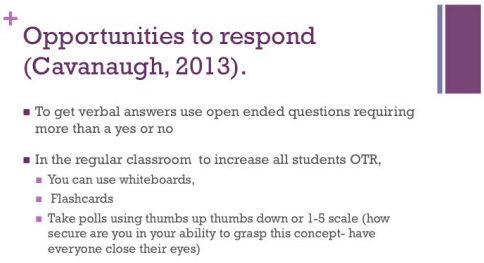

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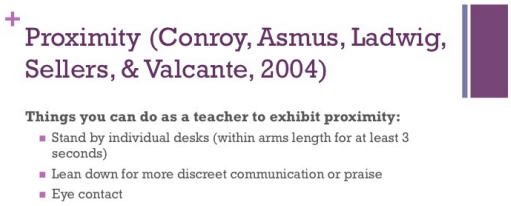

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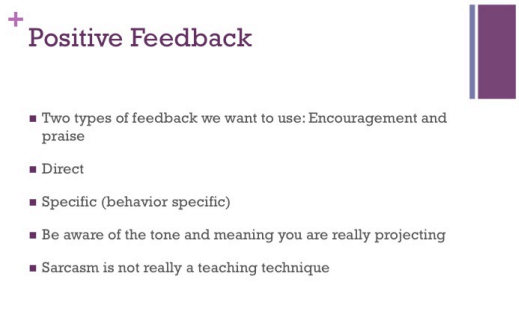

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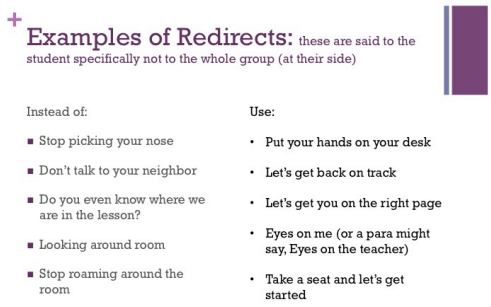

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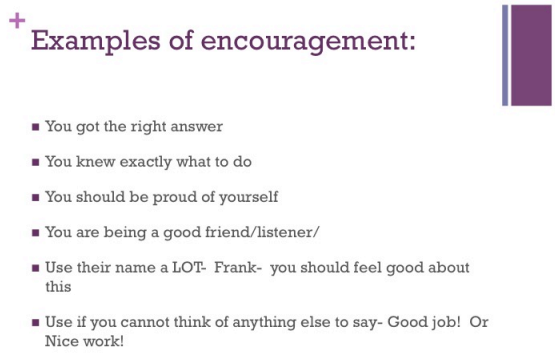

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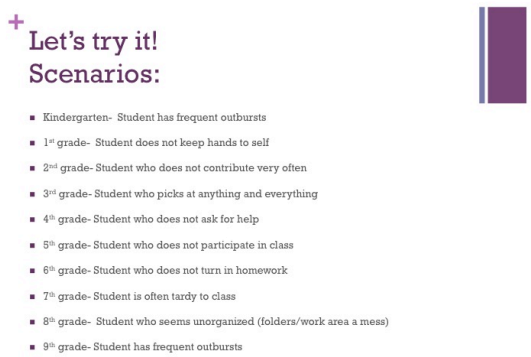

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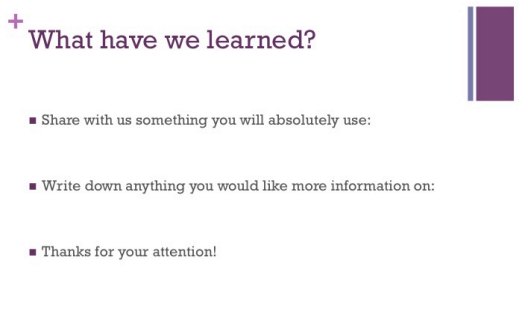

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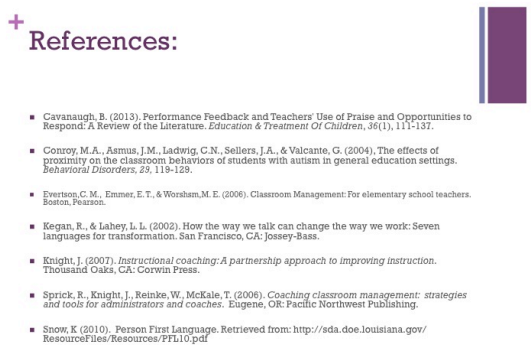


Slide 12

Appendix C

How to use the technology: Teacher and coach packet, Coach addendum

Coaching Process

iPad

1. Turn on iPad by pushing the button on the top right of the iPad. It is right above the camera lens.

Connect to the Internet

2. Go to the settings by clicking on the setting icon
3. Click on Wi-Fi on the upper left of the screen.
4. Select network (guest) and enter username and password
5. Double check connection by checking the Wi-Fi bars in the topmost left corner of the iPad. There should be this –

Connect Bluetooth

6. Make sure Bluetooth accessibility on the iPad is turned on.
    a. Go to settings
    b. Click on Bluetooth (just under Wi-Fi) and make sure it is "on"
7. Turn on Bluetooth device. Make sure the switch at the top is turned on and shows green.
8. Press and hold the call button (the middle big button) until the light flashes red and blue. ***NOTE – You may have to do this several times. Don't get discouraged! If you cannot connect after several minutes, contact the coach.
9. Under the Bluetooth on the settings menu, you will see a list of devices. You should see **EM299**. Click on it to connect. When it is connected it will say connected next to E**M299**
    a. If it asks you for a password just type 0000 (that is 4 zeros)

Facetime

10. Return to the home screen (press home button) and select the facetime app.
11. Select the desired coach contact. Click their name and then click the email address to call.
12. Wait to connect with your coach. **This may take a minute or two**
13. At the bottom of the screen you will see 3 buttons. The first is the volume button. Click it and make sure it is connected to the Bluetooth. It should show the Bluetooth symbol. You can check the sound with your coach and use the volume buttons on the iPad or Bluetooth device to control the sound.
14. The last button – controls the camera. Make sure the small square, what the coach sees, is clearly facing the student. The student should not see the iPad screen. The student should only see the silver back of the iPad.

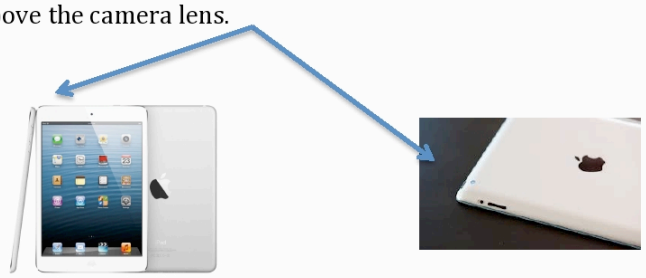
Ending a Session

15. When the session is complete, close the app by pushing the home button & replace the silver iPad cover.

Coaching Process
iPad & Internet

iPad

1. Turn on iPad by pushing the button on the top right of the iPad. It is right above the camera lens.



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4. Select network (guest) and enter username and password
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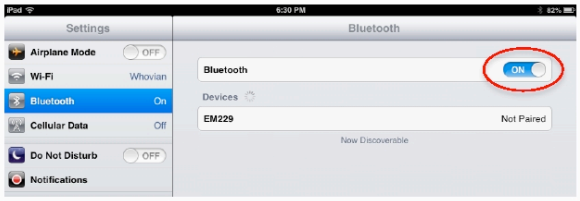
2

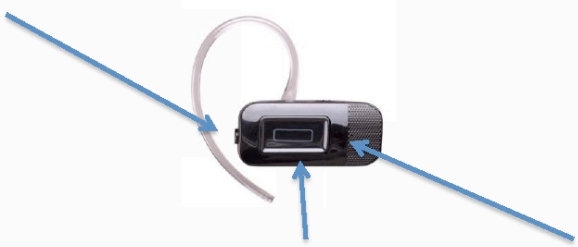
Coaching Process
Bluetooth

Connect Bluetooth

1. Make sure Bluetooth accessibility on the iPad is turned on.
   a. Go to settings
   b. Click on Bluetooth (just under Wi-Fi) and make sure it is "on"



2. Turn on Bluetooth device. Make sure the switch at the top is turned on and shows **green**.



3. Press and hold the **call button** (the middle big button) until the **light** flashes red and blue. ***NOTE – You may have to do this several times. Don't get discouraged! If you cannot connect after several minutes, contact the coach.

4. Under the Bluetooth on the settings menu, you will see a list of devices. You should see **EM299**. Click on it to connect. When it is connected it will say connected next to E**M299**
   a. If it asks you for a password just type 0000 (that is 4 zeros)

3

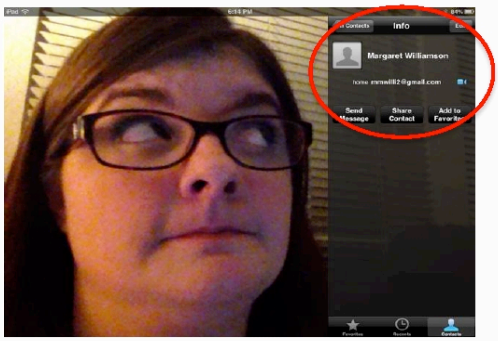
Coaching Process
Facetime & Ending A Session

Facetime

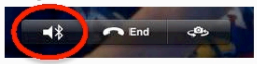
1. Return to the home screen (press **home**  button on bottom of ipad)

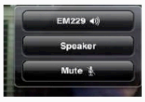
and select the facetime app. 

2. Select the desired coach contact. Click their name and then click the email address to call.



3. Wait to connect with your coach. **This may take a minute or two**
4. At the bottom of the screen you will see 3 buttons.





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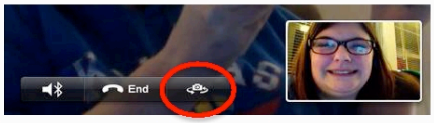
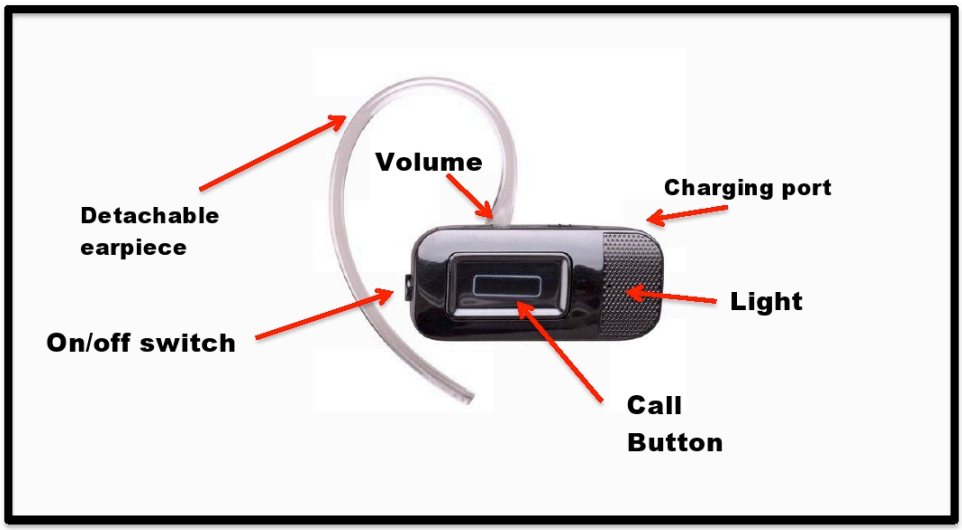


Ending a Session

When the session is complete, close the app by pushing the home button & replace the silver iPad cover.

4

Bluetooth



iPad

How to use the technology: Coach addendum

QuickTime

Record your screen

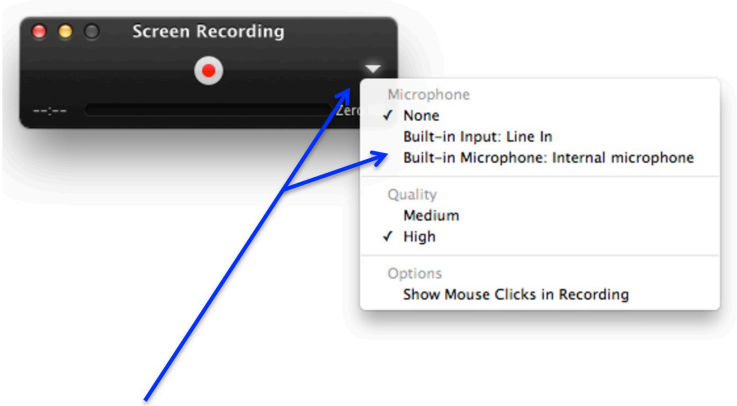
You can use QuickTime Player to make a video recording of your screen or just a region of your screen and save it as a movie file for later viewing. This can be helpful for showing others how to perform a task, workflow, or for training.

Choose **File > New Screen Recording**. To start recording what's occurring on your Mac's screen, click the round record button.

You can record some of all of the screen:

- If you want to record the entire screen, click anywhere on the screen to start recording.
- To record just a smaller portion of the of the screen, drag your pointer to select the region of the screen you want to record, and then click the Start Recording button within the region.

To stop recording, click the stop button in the menu bar, or press the Command-Control-Escape key combination (all at once) on the keyboard.



Clicking the **triangle icon** gives you additional options, such as letting you choose whether to use the built-in microphone on your Mac, an external microphone you've connected to your Mac, a microphone from a connected Apple display, or the option to simply use no microphone at all. The triangle also allows you to adjust the finished quality of your screen recording, select whether or not your mouse clicks are shown during the recording (the pointer is highlighted when you click), and to select what location (on your Mac) to save your screen recording when finished.