Implementation Integrity of Practice-Based Coaching: Preliminary Results from the BEST in CLASS Efficacy Trial

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Abstract The purpose of this article is to describe the practice-based coaching model used in BEST in CLASS, a Tier-2 classroom-based intervention comprised of evidence-based instructional practices designed to prevent and ameliorate the chronic problem behaviors of young children at risk for the development of emotional/behavioral disorders. Following a description of the model, data from year two of an ongoing 4-year randomized control trial are presented that describe (a) the amount (i.e., dosage) of coaching teachers received during BEST in CLASS implementation, (b) the integrity with which coaches implemented the BEST in CLASS coaching model, and (c) subsequent teacher implementation of the BEST in CLASS strategies. Forty-eight (23 BEST in CLASS; 25 comparison) teachers and ten coaches participated in this descriptive study. Data indicate that following coaches' observations, teachers received approximately 30 min of practice-based coaching during coaching meetings each week of implementation, and integrity data indicate that coaches implemented the critical coaching skills during the coaching meetings with integrity. Adherence data indicate that teachers in the treatment group increased their extensiveness of the use of BEST in CLASS practices at both post-treatment and 1-month follow-up compared to comparison teachers; competence data indicated that teachers in the treatment group increased the quality of delivery of practices at post-treatment compared to comparison teachers. Implications of these findings for both future research and practice-based coaching implementation are discussed.

Keywords Early intervention · Practice-based coaching · Problem behavior

Introduction

Optimizing young children's learning through high-quality early childhood programming is gaining much needed national attention. Recently, federal agencies (US Department of Health and Human Services, 2012) and professional organizations (e.g., National Association for the Education of Young Children) have emphasized the short- and long-term benefits for children when they have an opportunity to access high-quality learning environments during their early years. Along with the emphasis on providing high-quality early childhood environments for young children is a parallel emphasis on providing high-quality professional development opportunities for early childhood teachers to assure that they have the knowledge and skills needed for creating such environments (e.g., see U. S. Department of Health and Human Services, 2012).

At the classroom level, a high-quality learning environment includes a number of important instructional elements, such as providing a safe classroom environment that is responsive to children's social, emotional, and pre-academic developmental needs and the use of organizational, instructional, and classroom management strategies that

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promote child engagement and learning (e.g., see Abry, Rimm-Kaufman, Larsen, & Brewer, 2013; Curby, Rimm-Kaufman, & Abry, 2013; Williford, Vick Whittaker, Vitiello, & Downer, 2013). To ensure that these elements are in place within a classroom, early childhood teachers need to have both a solid *understanding* of these critical elements *and* be proficient in *using* them across a variety of contexts with all children in their classrooms.

Although many early childhood teachers do possess knowledge of these key elements and incorporate them into their classrooms to varying degrees, classrooms are dynamic environments and children's learning in these environments is influenced by a number of other factors, including the individual characteristics of the children (Bradley & Corwyn, 2002; Hetzner, Johnson, & Brooks-Gunn, 2011; Patterson, Reid, & Eddy, 2002; Yoshikawa, Aber, & Beardslee, 2012). Even in the most high-quality early childhood classrooms, teachers may be challenged to provide high-quality environments for all children, especially those who need more intensive instruction due to learning and behavioral challenges. To create high-quality learning environments to meet these children's needs, early childhood teachers often need more intensive and focused professional development activities which can strengthen their knowledge and skills in learning how to implement evidence-based practices with individual children in their classrooms (Becker & Domitrovich, 2011; Joyce & Showers, 2002; Snyder & Wolfe, 2008; Trivette, Dunst, Hamby, & O'Herin, 2009).

Professional Development for Individualizing Instruction

When creating high-quality environments for individual children with learning and behavioral challenges, "one size does not fit all." Typically, children with learning and behavioral problems need a more intensive and individualized approach to instruction. Likewise, teachers who work with these children are likely to need a more intensive and individualized approach to professional development (Conroy, Alter, Boyd, & Bettini, 2014). Teachers may have a general knowledge of effective strategies and practices that can be used to support children's learning, but they often indicate the need for more professional development and support in acquiring the skills needed to implement these individualized practices with specific children in their classrooms (Hemmeter, Corso, & Cheatham, 2006).

As indicated by the National Professional Development Center on Inclusion (2008), high-quality professional development is a transactional process and should provide teachers with the structure and support for *learning* and *applying* knowledge and skills within their classrooms. More importantly, high-quality professional development

is linked to high-quality teaching and positive outcomes for children (for a discussion, see Snyder, Denney, Pasia, Rakap, & Crowe, 2011). Practice-based coaching is one type of professional development that is more individualized and is designed to support teachers' implementation of effective practices within their classrooms (Snyder, Hemmeter, et al., 2011; Snyder, Denney et al., 2011; Snyder & Wolfe, 2008).

Originally developed by Snyder (2007), practice-based coaching is a collaborative professional development model in which a teacher and a coach work together to assess the classroom needs, plan and implement the use of select instructional practices within the classroom, and evaluate the effectiveness of these practices on desired teacher and child outcomes (for a discussion, see Snyder, Hemmeter et al., 2011; Snyder et al., 2012; Snyder & Wolfe, 2008). Typically, within a practice-based coaching framework, a three-step process occurs. First, the teacher and the coach conduct a needs' assessment to identify goals and instructional practices to help accomplish those goals. This initial step is followed by the development of an action plan that outlines how these practices will be implemented within the classroom. Next, the coach conducts a direct observation of the teacher's implementation and provides the teacher with performance feedback and support, while the teacher reflects on his or her use of the practice and responds to feedback. These steps are repeated over time until the desired teacher and child goals and outcomes have been met. As suggested by Joyce and Showers (2002) when used in combination with other professional development activities, such as modeling and practice, teachers who receive coaching have a higher likelihood of using the practices within their classrooms.

A number of studies (e.g., Conroy, Sutherland, Vo, Carr, & Ogston, 2014; Conroy, Sutherland, Algina, et al., 2014; Fox, Hemmeter, Snyder, Binder, & Clarke, 2011; Hemmeter, Snyder, Kinder, & Artman, 2011) have employed a practice-based coaching model to support teachers' use of effective practices to improve children's social, emotional, and behavioral outcomes. For example, in a recent study Fox et al. (2011) examined the relationship between professional development training, including coaching, and teachers' implementation of promotion and prevention practices. They found that the dosage of coaching was an important factor associated with high levels of teachers' implementation of selected practices. In addition, Hemmeter et al. (2011) found that data-based performance feedback was an important component in changing teacher behavior.

One key finding from these studies is that when professional development models include practice-based coaching, teachers implement targeted practices within their classrooms with integrity and child outcomes

improve. As discussed earlier, both teacher implementation integrity and child outcomes are important because they emphasize the connection between high-quality professional development (i.e., practice-based coaching), high levels of integrity of implementation of intervention practices by teachers, and positive child outcomes. Although the relationship between integrity and child outcomes has been highlighted in the literature (see Durlak, 2010), the field continues to struggle with understanding what components of practice-based coaching are important in order to assure that teachers have the necessary knowledge and skills so practices can be delivered with high levels of integrity. An initial step of this process is describing the key features and components of practice-based coaching. Therefore, the purpose of this article is to describe the practice-based coaching model used in BEST in CLASS, a Tier-2 classroom-based intervention designed to prevent and ameliorate the chronic problem behaviors of young children at risk for the development of emotional/behavioral disorders, and examine (a) the amount (i.e., dosage) of coaching teachers received during BEST in CLASS implementation, (b) the integrity with which coaches implemented the BEST in CLASS coaching model, and (c) treatment acceptability using data from teachers in the treatment condition in year two of a randomized control trial (RCT) that is currently in its fourth and final year. In addition, teacher implementation of BEST in CLASS strategies will be examined using data from both treatment and comparison conditions in year 2 of the RCT. While other investigations report child and teacher outcomes related to the BEST in CLASS model (see Conroy, Sutherland, Vo, et al., 2014; Conroy, Sutherland, Algina, et al., 2014; Sutherland, McLeod, Conroy, Abrams, & Smith, 2014; Sutherland, Conroy, Vo, Abrams, & Ogston, 2013), this is the first article to present descriptive data on the practice-based coaching component of the model and as such provides important information related to the use of practice-based coaching and teacher implementation of identified practices.

Methods

BEST in CLASS Practice-Based Coaching

BEST in CLASS is comprised of evidence-based instructional practices designed to prevent and ameliorate problem behaviors, enhance positive teacher–child interactions, and promote engagement and appropriate behaviors in young children at risk for emotional and behavioral disorders (EBD). BEST in CLASS is delivered by teachers to focal children in the classroom who are at risk of EBD; therefore, it is important that teachers gain both the knowledge and skills for implementing the BEST in CLASS practices with high levels of integrity. This is accomplished through a targeted professional development program comprised of a 1-day didactic group workshop followed by 14 weeks of individualized practice-based coaching. During the 1-day workshop and throughout practice-based coaching, teachers and coaches use a standardized manual to discuss and plan for the use of specific practices associated with BEST in CLASS, namely Rules, Precorrection, Behavior Specific Praise, Opportunities to Respond, Corrective Feedback, and Instructive Feedback. For specific information about these practices and their use within BEST in CLASS, see Conroy, Sutherland, Vo, et al. (2014).

BEST in CLASS coaches and teachers utilizes the practice-based coaching model originally developed by Snyder (2007) that is sustained, collaborative, and cyclical. Coaches are trained to (a) demonstrate mastery of the BEST in CLASS practices; (b) demonstrate competence in providing quality practice-based coaching and its application within the BEST in CLASS model; (c) demonstrate collaborative communication skills including reflective listening, goal setting, self-reflection, and related skills; and (d) explain to teachers how each of the BEST in CLASS data collection tools can be used to evaluate progress toward meeting specific goals. Collaborative communication skills are stressed during training of coaches to facilitate teacher ownership of and partnership in the process. Following training, all coaches demonstrate mastery in the essential coaching skills by completing a mock coaching meeting which is video-recorded and coded by a reliable observer using a coaching integrity form discussed below. Mastery is attained when a coach demonstrates all of the vital components of the coaching model (below) within the context of the coaching meeting and when he/she demonstrates the required communication and collaboration skills. Participating teachers are initially trained through a 1-day didactic group workshop to lay the knowledge foundation for practice-based coaching. At the workshop, teachers receive their BEST in CLASS teacher manual and participate in hands-on activities, role-play scenarios, and view modeled and video examples of implementation of each BEST in CLASS practice within a classroom.

Coaching begins approximately 1 week after the workshop and occurs for 14 consecutive weeks. Each week can be divided into three parts: the classroom observation, the coaching meeting between the teacher and coach that occurs later on the same day, and the practice and reflection time that occurs in between observation/coaching meeting days. Coaching within BEST in CLASS follows the cycle illustrated in Fig. 1 and includes six distinct stages. For the purpose of this paper, they are organized numerically. In practice, one stage flows into another as the process repeats itself weekly. *Stage 1: facilitated instruction of new skill* and

Fig. 1 Stages of the BEST in CLASS coaching model

Stage 2: shared goals and action planning both occur during the weekly coaching meeting. Stage 1 begins with a brief assessment of the teacher's understanding of the targeted BEST in CLASS practice. Facilitated instruction is scaffolded from that point to ensure the teacher has a clear understanding of the definition and quality indicators of implementing the practice. The action plan includes the definition and examples of its use, which are determined by the coach and teacher collaboratively, and a linking statement illustrating how the practice can be used in combination with other BEST in CLASS practices. In Stage 2, the coach and teacher work together to identify problem behaviors displayed by focal children and the settings in which they occur. They then create an individualized goal utilizing the targeted BEST in CLASS practice to address the specific behaviors and settings identified. The action plan includes a goal statement addressing quality and quantity for the teacher's behaviors, expected child outcomes, how information will be shared with caregivers, when and where the strategy will be used, what the teacher will do to accomplish the goal, how the teacher will know if he/she has met the goal, and the supports that will be provided by the coach. Each week, the coach and teacher select either modeling or prompting as a support in addition to other material and informational supports such as encouragement and reminders. While planned during the coaching meeting, the modeling and prompting may not occur within the classroom until a later time when the coach is in the classroom. During modeling, coaches may role-play with teachers or may interact briefly (approximately 5 min) with children to model the use of a predetermined strategy within a specific context. During prompting, the coach prompts the teacher (verbally or using a gestural cue) during instruction to signal the teacher to use a predetermined strategy.

Stage 3: guided practice occurs during the week as the teacher practices the steps involved in the plan. The coach checks in with the teacher throughout the week via email, phone, and/or site visits to offer additional information about the targeted BEST in CLASS practice of the week and to provide any supports agreed upon during the action planning stage. During this time, both coaches and teachers engage in *Stage 4: reflection*. Teachers are encouraged to self-reflect on their utilization of the targeted BEST in CLASS practice and communicate any important insights to the coach using a Teacher Weekly Self-Reflection form. The coach reflects on his/her most recent observation and coaching meeting to ensure that all stages of the BEST in CLASS coaching process were completed with integrity. This is done as coaches self-reflect while completing the BEST in CLASS Coaching Integrity form (see below).

Finally, *Stage 5: direct, focused observation* and *Stage 6: reflection and feedback* occur in the teacher's classroom during the next weekly visit. Coaches begin with a brief period of modeling and/or prompting of a specific strategy that was pre-arranged during the coaching meeting that occurred the previous week. Coaches then collect direct observation data utilizing the Teacher–Child Interaction Direct Observation System (TCIDOS; Sutherland, Conroy, et al., 2013) as well as video and anecdotal notes to share with teachers. During this time, coaches do not interact with teachers or children. Rather, their focus is solely on observing the teacher and focal children interacting within a naturally occurring instructional situation. The final stage begins between the observation and coaching meeting and concludes with the sharing of the reflection and provision of feedback at the beginning of the coaching meeting. During this stage, the teacher reviews the appropriate weekly self-assessment form, while the coach uses this time to prepare feedback to be shared with the teacher during the coaching meeting. The coach and teacher (individually and together) attempt to identify what was effective and what barriers exist in order to refine the implementation of BEST in CLASS strategies for the teacher within the context of his/her classroom. This stage concludes with the teacher determining if the weekly goal has been met. If it has, the coach and teacher collaboratively select a new goal. If the goal was not met, the coach and teacher discuss the reason(s) why and create a new goal and action plan including steps the teacher and coach will take to address any identified barriers. Upon conclusion of Stage 6, the entire process is repeated for 14 weeks with new practices or refinement of practices occurring during each week. All teachers who complete the 14 weeks of coaching work with coaches to focus on each BEST in CLASS strategy for 2 weeks followed by two concluding weeks focusing on linking all the BEST in CLASS practices together.

Setting

The current study took place in two southeastern states in federally or state-funded early childhood programs (e.g., Head Start, Title I, state-funded prekindergarten) serving children aged 3–5 years old. Most students served in these programs were minorities and received free or reduced lunch. Since BEST in CLASS is an intervention added to the existing classroom curriculum, both the treatment and comparison classrooms continued with their ongoing "business as usual" instructional approaches. Upon post-test, we surveyed all treatment and comparison teachers to identify any other formal social, emotional, and behavioral interventions that were implemented throughout the year, and no differences were found between the two conditions.

All of the classrooms in this study were housed in early childhood centers or within elementary schools. In one state, all early childhood classrooms were located within two Head Start programs. One Head Start was administered by a local school district, and the other was administered by a community-based early childhood agency. In the second state, classrooms were located within 12 elementary schools and four early childhood centers administered through three local school districts. Between 1 and 5, teachers participated from each school or early childhood center depending upon the number of classrooms available to participate within that school or center, with an average of 1.66 teachers per school/program. BEST in CLASS coaches worked with between 1 and 4 teachers ($M = 2.2$) depending upon their position and assigned responsibilities.

Participants

Coaches

Ten coaches implemented the BEST in CLASS coaching model. Nine were females, and one was male (age range 25–65 years old). Seven coaches were Caucasian women, while the other three coaches were Hispanic. Five coaches were graduate students seeking a master's or doctoral degree in education or a related field (School Psychology, Special Education, Counselor Education) and four were former teachers. One coach held a doctoral degree in Special Education.

Teachers

Teacher participants were first contacted about potential participation in the beginning of the school year. Teachers who consented to participate were contacted again approximately 1 month into the school year to help identify children in their classrooms who were potentially at risk for

Table 1 Teacher demographics

Item	BEST in CLASS	Comparison	Total
Number of teachers	23	25	48
Age range (%) (years)			
18–25	8.7	12.0	10.4
26–35	26.1	16.0	20.8
36–45	21.7	24.0	22.9
46–55	17.4	16.0	16.7
55+	26.1	32.0	29.2
Female (%)	100	96	97.9
Race (%)			
Caucasian	69.6	40.0	54.2
African American	26.1	52.0	39.6
Hispanic	0.0	8.0	4.2
Other	4.3	0.0	2.1
Average years teaching experience (SD)	10.3 (9.5)	15.3 (11.6)	12.8 (10.8)
Highest level of education (%)			
Master's degree	21.7	48.0	35.4
Bachelor's degree	39.1	28.0	
Associate's degree	39.1	24.0	

EBD. Up to three children in each class were screened for eligibility in the study after informed consent was obtained from their caregivers. Fifty-one teachers were randomly assigned to condition (BEST in CLASS or comparison) in year 2 of the parent study, and after attrition, a total of 48 teachers completed the study with 23 teachers assigned to the BEST in CLASS treatment condition and 25 teachers assigned to the comparison condition. See Table 1 for further detail on the teacher demographics.

Measures

Several measures were used to obtain descriptive data on the practice-based coaching model used within the BEST in CLASS intervention. These included measures of coaching dosage and coaching integrity.

Coaching Dosage

Coaches' self-reported coaching dosage following each weekly observation and coaching meeting with each participating teacher. Dosage data included the duration of the coaching meeting and the frequency of optional follow-ups of three types (email, phone, site visit). Averages of coaching dosage per teacher were calculated using the duration (in minutes) of coaching meetings divided by the total number of coaching meetings held. While the coaching meetings were designed to last approximately

Table 2 Coaching integrity procedural items

Item
1. Completes observation and data collection according to specific protocols
2. Provides opportunities for teacher self-assessment and facilitates teacher self-reflection
3. Collects, prepares, and communicates video, anecdotal, and graphical data, including varied relevant examples of strategies
4. Reviews goals, feedback, and teacher self-assessment to help teacher synthesize information
5. Discusses and assists with home-school communication
6. Collaboratively begins goal and action planning for following cycle
7. Goal and action plan relate to specified BEST in CLASS strategy
8. Goal and action plan are specific, measurable, and reasonable
9. Goal and action plan includes quantity and quality components
10. Supports teacher to select appropriate evaluation tools based on goal
11. All components of goal and action plan are fully completed

30 min each week, they varied in length from 10 to 60 min depending on the teachers' needs, the amount of time needed to discuss the practice and develop the action plan, and unusual circumstances. For example, some teachers required additional support during some coaching meetings, which lead to longer meetings. Other teachers had emergencies come up resulting in truncated meeting times which were followed by additional email and/or phone follow-up.

Coaching Integrity

Coaching integrity data included coach self-reports as well as direct observations. Self-report data included a checklist of coaching components (e.g., modeling and/or prompting; observational data collection; videotaping the teachers' implementation of practices during the selected activity; completing anecdotal notes). Trained observers at each research site collected observational data using the BEST in CLASS Coaching Integrity form. The form was divided into two categories: (1) collaboration competencies and (2) coaching procedures. Collaboration competencies include rapport building, communication skills, and collaborative planning, and were rated on a three-point Likert-type scale (i.e., 1 = *not at all*; 2 = *somewhat*; and 3 = *extensive*). Eleven BEST in CLASS coaching procedures (see Table 2) were recorded as present or absent (yes/no). Coaching sessions were coded either live or from video recordings.

Prior to coding, coders at each site were trained on the procedures outlined in the Coaching Integrity Manual. Training included memorizing and discussing the coding definitions as outlined in the BEST in CLASS Coaching Integrity Manual and then practicing by coding a master coded video of a coaching meeting. Coders at each site had to achieve 80 % reliability on each code prior to coding any sessions. Coaching integrity was collected across coaches and across practice modules. Sessions were randomly selected to sample all modules with coaches having approximately two sessions per teacher observed ($M = 1.9$, *range* 1–3).

For the BEST in CLASS Coaching Integrity form, interobserver agreement was collected for 23.8 % of observations by a secondary observer and was calculated by the number of agreements divided by the number of agreements plus disagreements multiplied by 100. Agreements ranged from 87 to 100 % across items.

Teacher Implementation

The BEST in CLASS Adherence and Competence Scale (BiCACS; Sutherland et al., 2014) was developed as a treatment integrity measure to assess the adherence and competence of delivery of BEST in CLASS practices by teachers. Both subscales assessed seven items (Rules, Instructional Pace, Precorrection, Opportunities to Respond, Behavior Specific Praise, Corrective Feedback, Instructive Feedback) using a seven-point Likert-type scale ranging from "Not At All" to "Very Extensive" for the Adherence Scale and "Very Poor" to "Excellent" on the Competence Scale. Coaches and research assistants (who conducted interobserver agreement observations as well as observations in comparison classrooms) participated in a 2-h training in the administration and scoring of the BiCACS. Additionally, coaches and research assistants used a manual to facilitate scoring in the field. The BiCACS was completed for each teacher-focal child dyad following direct observations at baseline (before teacher training and coaching began), six times during the 14 weeks of the implementation of the intervention, and 1 month after the implementation of the intervention ended to evaluate the adherence and competence of the teacher's implementation of the practices with each focal child in both the BEST in CLASS and comparison conditions.

In order to assess interobserver agreement, a secondary observer collected data on 197 of 824 total observations across both conditions (23.9 %) and reliability was calculated using intraclass correlation coefficients (ICC). For the Adherence subscale, using Cicchetti's (1994) criteria item ICCs ranged from "fair" to "excellent" (ICCs ranged from .40 to .83 [$M = .71$, SD = .13]), while for the Competence subscale item ICCs ranged from "poor" to "good" (ICCs ranged from .12 to .62 [$M = .37$, SD = .15]). The internal consistency of the Adherence and Competence subscales

was acceptable ($\alpha = 0.825$, 0.837 for Adherence and Competence, respectively).

Intervention Acceptability

The BEST in CLASS Intervention Acceptability Scale was completed by teachers in the BEST in CLASS condition at posttest. Using a Likert-type scale (1 = *low*, 5 = *high*) teachers rated 12 items associated with the acceptability of BEST in CLASS intervention, such as comfort level with implementation, time involved with implementation, and fit within their classroom routine. Teachers also rated whether they will continue to use the BEST in CLASS strategies as well as an overall rating of the intervention.

Design

Data for the current study are from year two of an ongoing 4-year randomized controlled trial to examine the efficacy of the BEST in CLASS intervention model. For the RCT, teachers were randomly assigned to treatment or comparison groups within each school or early childhood center. Since this is a preliminary study and we were interested in teachers' implementation of BEST in CLASS, an a priori decision was made to conduct follow-up analyses on teacher implementation data. For the present study, descriptive data are presented on the coaching components and a repeated measures analysis of variance was used to examine teacher implementation across the BEST in CLASS and comparison groups. These data are reported by phase, whereby means were computed across observations at pre-treatment (baseline), post-treatment (end of intervention), and maintenance (1 month after coaching ended).

Results

Coaching Dosage

Across the 23 participating BEST in CLASS teachers, a total of 321 coaching meetings occurred across the 14 weeks. Teachers received an average of 6.42 h (SD = 0.92, *Range* 5.0–8.73) of coaching meetings across the course of the 14-week intervention, with an average of 13.96 (SD = 0.21, *Range* 13–14) coaching meetings across the 14 weeks. Coaching meetings lasted an average of 27.70 (SD = 3.83, *Range* 10–60) minutes and teachers received follow-ups (email, phone, or in-person visit) an average of 1.84 times per week (SD = 0.48, *Range* 0–4). Modeling and/or prompting occurred an average of 5.97 (SD = 2.10, *Range* 3–12) minutes per week.
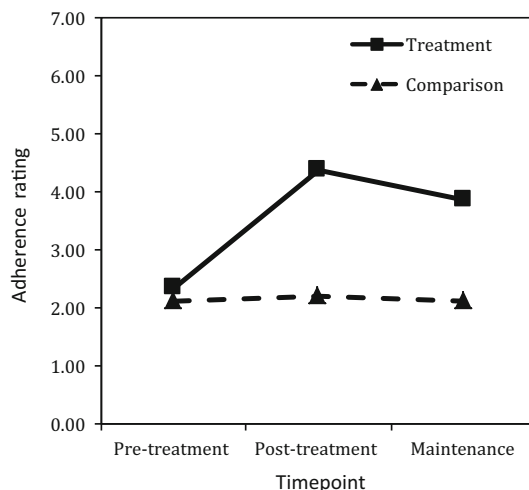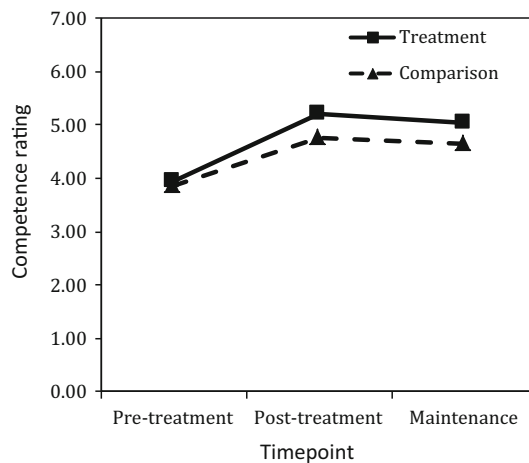
Fig. 2 Adherence rating means by phase

Fig. 3 Competence rating means by phase

Coaching Integrity

Data from coach self-reports indicated that teachers received either modeling or prompting or both in 98.97 % of sessions. Modeling was used during 79.26 % of sessions, while prompting was used during 43.87 % of sessions. Coaching observations consisted of direct observation (100 % of sessions), video data collection (96.96 % of sessions), and anecdotal data collection (99.67 % of sessions).

Observers coded 42 randomly selected live (47.6 %) or videotaped coaching meetings across all coaches (*Range* 2–5 observations per coach) using the BEST in CLASS Coaching Integrity form. Data indicated that coaches displayed desired collaborative competencies somewhat to
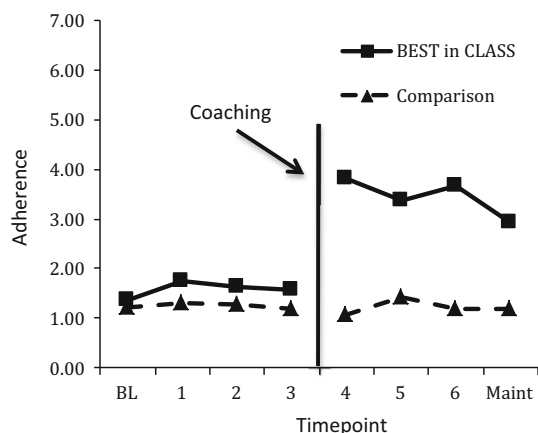
Fig. 4 Effect of coaching on teacher implementation of corrective feedback—adherence

Fig. 5 Effect of coaching on teacher implementation of corrective feedback—competence

extensively in the areas of rapport building ($M = 2.95$, SD = 0.22), communication skills ($M = 2.57$, SD = 0.50), and facilitating collaboration ($M = 2.57$, SD = 0.55). Across observations coaches implemented an average of 91.6 % (SD = 13.8, *Range* 45–100 %) of the 11 procedural items.

Implementation Integrity

Data indicated that scores varied on the Adherence subscale across treatment phase by group, $F(2, 91) = 40.08$, $p < .001$. Post hoc analyses indicated that Adherence ratings were significantly different between groups at pre-treatment, favoring the treatment group ($t(126) = 2.36$, $p < .05$, ES = 0.40). Significant differences were also found favoring the treatment group at both post-treatment ($t(101) = 10.26$, $p < .001$, ES = 2.07) and maintenance ($t(94) = 8.69$, $p < .001$, ES = 1.81). Data also indicated that scores did not vary on the Competence subscale across treatment phase by group, $F(2,89) = 1.36$, $p = .26$, although post hoc analyses did indicate significant differences favoring the treatment group at post-treatment ($t(101) = 2.09$, $p < .05$, ES = 0.41). Figures 2 and 3 show a graphic representation of Adherence and Competence subscale means across time by group.

Finally, in order to illustrate the additive effect of coaching on teacher implementation of an example of a BEST in CLASS practice, Figs. 4 and 5 show a graphic representation of teacher adherence and competence of delivery means of corrective feedback across eight data collection time points for teachers in both BEST in CLASS and comparison groups. Adherence data suggest that teachers in the BEST in CLASS group provided corrective feedback rarely, even after training, but increased their
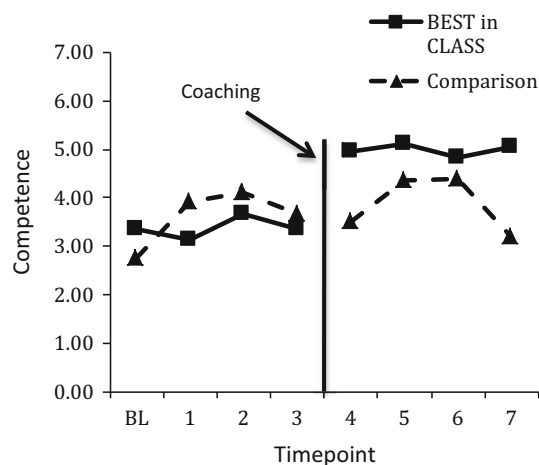
delivery of this practice after coaching on using corrective feedback began. In addition, competence data suggest that when teachers in the BEST in CLASS group used corrective feedback prior to coaching, on average it was delivered in the "acceptable" range. Following coaching, teachers delivered corrective feedback on average within the "good" range. It should also be noted that following coaching on these practices teacher implementation remained higher, even at 1-month maintenance, than all data points prior to coaching.

Intervention Acceptability

Teachers reported feeling very comfortable with the intervention and training they received and reported that it was minimally difficult to implement and minimally disruptive to their classroom. Overall teachers rated BEST in CLASS highly and reported that they would continue to use the intervention. See Table 3 for a summary of findings related to intervention acceptability.

Discussion

The purpose of this article was to describe the BEST in CLASS coaching model and present preliminary data on the implementation of the model with teachers in early childhood programs serving young children at risk for EBD. Findings on the implementation of the coaching component of the BEST in CLASS intervention suggest that coaches implemented the coaching model with integrity, and dosage data indicate that teachers received approximately 30 min of coaching during weekly coaching

Table 3 BEST in CLASS Teacher Acceptability Scale

Items	M (SD)
How comfortable were you with implementing the BEST in CLASS intervention?	4.61 (0.58)
How time intensive was it for you to implement the BEST in CLASS intervention?	2.78 (1.13)
How difficult was it for you to implement the BEST in CLASS intervention?	1.70 (0.93)
How disruptive was it to your classroom teaching and routine to implement the BEST in CLASS intervention?	1.87 (0.87)
How comfortable were you with the amount of training you received in gaining competence to implement the BEST in CLASS intervention?	4.61 (0.58)
How useful was the BEST in CLASS intervention in improving the classroom atmosphere?	4.17 (0.83)
How useful was the BEST in CLASS intervention in improving the focal child/children's challenging behaviors?	4.09 (0.60)
To what extent do you think there might be disadvantages in using the BEST in CLASS intervention? (reverse scoring for this item)	4.22 (0.80)
Does the BEST in CLASS intervention include new or different strategies that you have not used previously?	2.78 (1.31)
Does the BEST in CLASS intervention include familiar strategies that you have learned how to implement better or more effectively?	4.45 (0.74)
Will you continue to use the BEST in CLASS intervention in your classroom?	4.83 (0.39)
Overall how would you rate the BEST in CLASS intervention?	4.57 (0.59)

meetings. Teacher implementation data indicated that teachers in the BEST in CLASS intervention group experienced significant increases across time in their adherence scores; teachers in the intervention group also had significantly higher competence scores at posttest than teachers in the comparison group, but these differences were not present at maintenance. Finally, teachers reported that the intervention was not difficult to implement or disruptive to their classroom and overall the teachers rated BEST in CLASS highly.

Descriptive data from the current study indicate that for approximately 30 min per week during coaching meetings, coaches provided teachers with direct coaching via a variety of strategies, predominantly modeling, prompting, and performance-based feedback (e.g., direct observational data, videotaped examples, and anecdotal data) based upon observational and anecdotal data that coaches collected during their weekly observations in classrooms. In addition, teachers received an average of almost two follow-ups from coaches per week. Coaching integrity data suggest high adherence to the coaching protocol across items as well as collaboration competencies associated with the

coaching protocol. Thus, the BEST in CLASS coaching model appears feasible to implement within a randomized controlled trial. What requires further study is how feasible it is under less controlled and more naturalistic circumstances, for example, with early childhood program staff serving as coaches.

This study adds to a growing literature base supporting the use of practice-based coaching to improve instructional practices in early childhood classrooms (e.g., Conroy, Sutherland, Algina, et al., 2014; Fox et al., 2011; Snyder, Hemmeter, et al., 2011) and also contributes to the literature on treatment integrity within response to intervention models within schools (Burns, Jacob, & Wagner, 2008; Sanetti & Kratochwill, 2009). This study provides preliminary support for practice-based coaching within Tier-2 intervention models, such as BEST in CLASS, whereby coaches provide support for teachers' implementation of evidence-based instructional practices with young children with chronic problem behavior. As coaching models become more prevalent, the assessment of integrity for both the teacher and coach in tiered models of support may help increase our understanding of whether models are being implemented with high quality, therefore increasing the effectiveness of tiered models of support.

As the number of young children with chronic problem behavior in early childhood settings continues to rise (Brauner & Stephens, 2006; Carter et al., 2010; McCabe & Frede, 2007), so too does the need for feasible and sustainable evidence-based programs to be implemented by teachers in authentic early childhood settings (Domitrovich, Gest, Jones, Gill, & DeRousie, 2010). Results from this investigation support the assertion by Joyce and Showers (2002) that, when used in combination with other professional development activities, coaching can enhance the use of practices by teachers. Teacher implementation data from the current study suggest that teachers in BEST in CLASS classrooms delivered significantly more (i.e., adherence) of the BEST in CLASS practices across time than did teachers in the comparison group, while also improving the quality of delivery (i.e., competence) of the practices at the post-treatment time point. It must be pointed out, however, that the nature of the treatment integrity data collection procedures may have underestimated the quality of teacher implementation in this study, at least in relation to group differences. To illustrate, observers rate each adherence item on a seven-point scale that assesses the extensiveness (e.g., thoroughness; frequency) of delivery of specific practices that comprise BEST in CLASS. Observers then rate the competence of delivery of each observed practice delivered by teachers and make a composite assessment of the observation session on a seven-point scale. Therefore, Teacher A can provide a large number (e.g., 30) of opportunities to

respond (OTR) in a high-quality manner, for example, and receive an adherence rating of "7" and a competence rating of "6." Teacher B may provide a small number of OTR (e.g., 5), but with high quality as well, and receive an adherence rating of "2" and a competence rating of "6." While Teacher A and B have the same competence rating for the observation, Teacher A delivered six times as many OTR as did Teacher B, highlighting the important link between adherence and competence. Therefore, the significant increase in adherence for teachers in the BEST in CLASS group, coupled with the small, but not significant, increase in competence, suggests that teachers in BEST in CLASS were delivering more of the BEST in CLASS practices than teachers in the comparison group, and at a minimum delivering them just as well. While the relationship between adherence, competence, and child outcomes remains largely unknown (Harn, Parisi, & Stoolmiller, 2013; Sutherland, McLeod, Conroy, & Cox, 2013), the measurement of adherence and competence in the BEST in CLASS efficacy study will allow us to ultimately compare the effects of these different dimensions of teacher implementation on child outcomes (Durlak & Dupre, 2008).

While future work will examine the relationship between these different dimensions of treatment integrity and child outcomes, the measurement of both adherence and competence of teacher delivery is an important direction for the field. In general, the measurement of competence of delivery of intervention components has been lacking in the education and prevention fields (Harn et al., 2013; Sanetti, Gritter, & Dobey, 2011; Sutherland et al., 2013). Data from the current study suggest that teacher competence of delivery of BEST in CLASS practices did improve in BEST in CLASS classrooms at posttest, representing an important aspect of integrity which appears to be amenable to improvement through methods such as coaching. Whereas treatment adherence focuses on *whether*, and *how much*, a teacher delivers specific practices, competence assesses whether a teacher knows *when* and *how* to deliver an intervention for maximum impact (Barber, Sharpless, Klostermann, & McCarthy, 2007). Therefore, the competent delivery of BEST in CLASS practices requires a teacher to adapt specific components to meet the unique characteristics of the classroom and the individual child. While teacher competence is hypothesized to play an instrumental role in intervention effectiveness (Harn et al., 2013; Sutherland et al., 2013), its relationship to child outcomes remains largely unknown and needs further investigation (e.g., Durlak, 2010).

While it must be kept in mind that this study did not examine the additive effects of practice-based coaching to training alone, BEST in CLASS is a "value-added" model in that many of the practices teachers are trained and coached

on are naturally occurring in early childhood classrooms (Conroy, Sutherland, Algina, et al., 2014). While Figs. 2 and 3 represent adherence and competence means across all BEST in CLASS strategies at three time points, Figs. 4 and 5 attempt to provide a more fine-grained illustration of teacher implementation data for one practice (corrective feedback) at eight different time points. These data suggest that coaching had an effect on teachers' adherence (extensiveness of delivery) and competence (quality of delivery) above and beyond that from the training alone; specifically, a slight decreasing trend was noted for teacher adherence of corrective feedback prior to the introduction of coaching, with a strong latency of change noted for this dimension immediately following coaching. Figure 5 shows a decreasing trend in competence for teachers in the comparison group prior to coaching and again the end of the intervention, while teachers in the BEST in CLASS group indicated a strong latency of change as well as maintenance of competent delivery across time of corrective feedback. Coaching dosage data indicating that teachers received 30 min of coaching and less than two follow-ups per week, in conjunction with the acceptability data, suggest that the BEST in CLASS coaching model is a promising tool for improving teacher, and ultimately, child, behavior with a relatively small dosage.

Implications for Practice and Research

Coaching on interventions such as BEST in CLASS represents a meaningful option for early childhood program-based personnel to create a more sustainable mechanism for behavioral support for focal children at risk for EBD within early childhood programs. Specifically, with coaching on a Tier-2 intervention such as BEST in CLASS, teachers demonstrate the ability to reduce problem behavior and improve outcomes for children needing individualized behavioral support above and beyond what is provided through a typical high-quality early childhood curriculum (Conroy, Sutherland, Algina, et al., 2014). If teachers were able to attain and sustain this level of competence in reducing problem behavior, then they would require less assistance for this population of children, allowing those support personnel (e.g., early childhood administrators; mental health professionals) to focus their efforts on the children needing the most intensive levels of support and intervention (e.g., Tier 3). In this manner, teachers are better able to individualize instructional needs of children, realizing the promise of practice-based coaching within tiered-levels of support.

While practice-based coaching, such as the model used in BEST in CLASS, appears to have promise at improving the quantity and quality of teachers' use of evidence-based instructional practices, the sustainability of the model

remains unknown. Future work should examine ways to provide coaching in cost-effective and feasible ways, while not jeopardizing the efficacy of the model used in BEST in CLASS. Future research may examine the use of on-site personnel (e.g., early childhood program administrators, mental health professionals, peer coaches) to provide coaching. In addition, online models of training (e.g., Mitchem et al., 2009; Miller, Fitzgerald, Koury, Mitchem, & Hollingsead, 2007) hold promise for both sustainability as well as reaching larger numbers of programs, classrooms, and teachers. Future work should explore similar online models to provide coaching supports to teachers implementing evidence-based practices in their classrooms. Fortunately coaching models, such as that used in the current study, provide some guidance for researchers developing other formats of coaching support.

Limitations

Several limitations of the current study should be kept in mind. First, as previously mentioned, the current study is a descriptive study of the coaching components included in the BEST in CLASS intervention and did not examine the additive effects of practice-based coaching to training without coaching. While the illustrative data across corrective feedback provide some support for the additive effect of coaching, future work should examine differences in teacher implementation between those that receive training and coaching and those that receive training alone. Second, the data from the current study describe the implementation of BEST in CLASS, a manualized Tier-2 intervention model, on a small number of teachers. As such, findings may not generalize to other teachers or other classroom-based intervention programs, Tier-2 or otherwise. Third, teachers may have varying degrees of understanding of behavioral interventions for young children, and this knowledge may impact their ability to implement programs such as BEST in CLASS. We did not collect data on their knowledge of behavioral interventions; therefore, we do not know whether BEST in CLASS has differential effects across teachers with varying knowledge of behavioral interventions. Fourth, this study did not examine the effects of the BEST in CLASS practice-based coaching model on child outcomes. Therefore, future research should focus on systematically examining the relationship between coaching (e.g., dosage; coaching integrity), teacher implementation, and child outcomes. Fifth, only 42 of 321 coaching meetings (13.1 %) were observed to assess coaching integrity and data reported here may not be representative of all coaching meetings; as such, readers should be cautious in their interpretations of these data. Sixth, item level ICCs on the competence subscale ranged from "poor" to "good" and as such should be interpreted

with caution. While this dimension of treatment integrity has been understudied in the literature (Hagermoser Sanetti, Dobey, & Gritter, 2012; Harn et al., 2013), previous work does suggest that competence may be harder to code than adherence (e.g., Hogue et al., 2008). Assuming competence matters in the delivery of school-based programming (see Goncy, Sutherland, Farrell, Sullivan, & Doyle, in press), future research should focus upon increasing the reliability of coding of competence items. Finally, the BEST in CLASS coaching component is based on an expert coaching model. While the ideal iteration of such a model involves coaching provided by professionals with expertise in coaching and young children with chronic problem behavior, further application of the coaching model utilizing other formats (e.g., web-based, site personnel) remain to be investigated.

Conclusions

Improving the outcomes of young children continues to gain attention, and increasingly there is a focus on the quality of early childhood programs. Teachers need quality training and support, both prior to and after they are in the classroom, and these needs become even greater as they attempt to provide high-quality programming for increasing numbers of young children with chronic problem behavior. Practice-based coaching, like the model described in this paper, appears to be a promising tool to help support early childhood teachers in their implementation of evidence-based practices in their classrooms. While much work remains to be done to maximize the effectiveness of such models, the current paper adds additional support to the growing literature on practice-based coaching and the potential for implementation of such coaching models in early childhood classrooms.

References

Abry, T., Rimm-Kaufman, S. E., Larsen, R. A., & Brewer, A. J. (2013). The influence of fidelity of implementation on teacher–student interaction quality in the context of a randomized controlled trial of the Responsive Classroom approach. *Journal of School Psychology, 51*(4), 437–453. doi:10.1016/j.jsp.2013.03.001

Barber, J. P., Sharpless, B. A., Klostermann, S., & McCarthy, K. S. (2007). Assessing intervention competence and its relation to

therapy outcome: A selected review derived from the outcome literature. *Professional Psychology: Research and Practice, 38*(5), 493–500. doi:10.1037/0735-7028.38.5.493

Becker, K. D., & Domitrovich, C. E. (2011). The conceptualization, integration, and support of evidence-based interventions in the schools. *School Psychology Review, 40*(4), 582–589.

Bradley, R. H., & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual Review of Psychology, 53*, 371–399.

Brauner, C. B., & Stephens, C. B. (2006). Estimating the prevalence of early childhood serious emotional/behavioral disorders: Challenges and recommendations. *Public Health Reports, 121*(3), 303–310.

Burns, M., Jacob, S., & Wagner, A. (2008). Ethical and legal issues associated with using response-to-intervention to assess learning disabilities. *Journal of School Psychology, 46*, 263–279.

Carter, A. S., Wagmiller, R. J., Gray, S. A. O., McCarthy, K. J., Horwitz, S. M., & Briggs-Gowan, M. J. (2010). Prevalence of DSM-IV disorder in a representative, healthy birth cohort at school entry: Sociodemographic risks and social adaptation. *Journal of the American Academy of Child and Adolescent Psychiatry, 49*(7), 686–698. doi:10.1016/j.jaac.2010.03.018

Cicchetti, D. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment, 6*, 284–290. doi:10.1037/1040-3590.6.4.284

Conroy, M. A., Alter, P., Boyd, B., & Bettini, E. (2014). Teacher preparation for students who demonstrate challenging behaviors. In P. T. Sindelar, E. D. McCray, M. T. Brownell, & B. Lingnugaris/Kraft (Eds.), *Handbook of research on special education teacher preparation* (pp. 320–333). New York: Routledge, Taylor, & Francis.

Conroy, M. A., Sutherland, K. S., Algina, J., Wilson, R., Martinez, J., & Whalon, K. (2014). Measuring teacher implementation of the BEST in CLASS intervention program and corollary child outcomes. *Journal of Emotional and Behavioral Disorders*. doi:10.1177/1063426614532949

Conroy, M. A., Sutherland, K. S., Vo, A., Carr, S. E., & Ogston, P. (2014). Early childhood teachers' use of effective instructional practices and the collateral effects on young children's behavior. *Journal of Positive Behavioral Interventions, 16*(2), 81–92. doi:10.1177/1098300713478666

Curby, T. W., Rimm-Kaufman, S. E., & Abry, T. (2013). Do emotional support and classroom organization earlier in the year set the stage for higher quality instruction. *Journal of School Psychology, 51*, 557–569. doi:10.1016/j.jsp.2013.06.001

Domitrovich, C. E., Gest, S. D., Jones, D., Gill, S., & DeRousie, R. M. S. (2010). Implementation quality: Lessons learned in the context of the Head Start REDI trial. *Early Childhood Research Quarterly, 25*(3), 284–298. doi:10.1016/j.ecresq.2010.04.001

Durlak, J. A., & DuPre, E. P. (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology, 41*, 327–350.

Durlak, J. A. (2010). The importance of doing well in whatever you do: A commentary on the special section, "Implementation research in early childhood education". *Early Childhood Research Quarterly, 25*(3), 348–357. doi:10.1016/j.ecresq.2010.03.003

Fox, L., Hemmeter, M. L., Snyder, P., Binder, D. P., & Clarke, S. (2011). Coaching early childhood special educators to implement a comprehensive model for promoting young children's social competence. *Topics in Early Childhood Special Education, 3*(3), 178–192. doi:10.1177/0271121411404440

Goncy, L. A., Sutherland, K. S., Farrell, A. D., Sullivan, T. N., & Doyle, S. T. (in press). Measuring teacher implementation in delivery of a bullying prevention program: The impact of

instructional and protocol adherence and competence on student responsiveness. *Prevention Science*.

Hagermoser Sanetti, L. M., Dobey, L. M., & Gritter, K. L. (2012). Treatment integrity of interventions with children in the *Journal of Positive Behavior Interventions* from 1999 to 2009. *Journal of Positive Behavior Interventions, 14*(1), 29–46. doi:10.1177/1098300711405853

Harn, B., Parisi, D., & Stoolmiller, M. (2013). Balancing fidelity with flexibility and fit: What do we really know about fidelity of implementation in schools? *Exceptional Children, 79*(2), 181–193.

Hemmeter, M. L., Corso, R., & Cheatham, G. (2006). A national survey of early childhood educators: Training needs and strategies. Paper presented at the Conference on Research Innovations in Early Intervention. Dan Diego, CA.

Hemmeter, M. L., Snyder, P., Kinder, K., & Artman, K. (2011). Impact of performance feedback delivered via electronic mail on preschool teachers' use of descriptive praise. *Early Childhood Research Quarterly, 26*, 96–106. doi:10.1016/j.ecresq.2010.05.004

Hetzner, N. P., Johnson, A. D., & Brooks-Gunn, J. (2011). Poverty, effects on social and emotional development. In S. Jarvela (Ed.), *Social and emotional aspects of learning* (pp. 77–86). Oxford: Elsevier.

Hogue, A., Henderson, C. E., Dauber, S., Barajas, P. C., Fried, A., & Liddle, H. A. (2008). Treatment adherence, competence, and outcome in individual and family therapy for adolescent behavior problems. *Journal of Consulting and Clinical Psychology, 76*(4), 544–555. doi:10.1037/0022-006X.60.1.73

Joyce, B., & Showers, B. (2002). *Student achievement through staff development* (3rd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.

McCabe, L. A., & Frede, E. C. (2007). *Challenging behavior and the role of preschool education*. New Brunswick: National Institute for Early Education.

Miller, K., Fitzgerald, G., Koury, K., Mitchem, K., & Hollingsead, C. (2007). KidTools: Self-management, problem solving, organizational and planning tools for children and teachers. *Intervention in School and Clinic, 43*(1), 12–19.

Mitchem, K., Koury, K., Fitzgerald, G., Hollingsead, C., Miller, K., Tsai, H. H., Zha, S. (2009). The effects of instructional implementation on learning with interactive multimedia case-based instruction. *Teacher Education and Special Education, 32*, 297–318.

National Professional Development Center on Inclusion. (2008). *What do we mean by professional development in the early childhood field?*. Chapel Hill: The University of North Carolina, FPG Child Development Institute.

Patterson, G. R., Reid, J. B., & Eddy, J. M. (2002). A brief history of the Oregon model. In J. B. Reid, G. R. Patterson, & J. Snyder (Eds.), *Antisocial behavior in children and adolescents: A developmental analysis and model for intervention* (pp. 3–20). Washington, DC: American Psychological Association.

Sanetti, L. M. H., Gritter, K. L., & Dobey, L. M. (2011). Treatment integrity of intervention with children in the school psychology literature from 1995 to 2008. *School Psychology Review, 40*(1), 72–84.

Sanetti, L. M., & Kratochwill, T. R. (2009). Toward developing a science of treatment integrity: Introduction to the special series. *School Psychology Review, 38*, 445–459.

Snyder, P. (2007). Impact of professional development on preschool teachers' use of embedded-instruction practices. Funded from the US Department of Education, Institute of Education Sciences, Washington DC (Grant No. R324A070008).

Snyder, P., Denney, M., Pasia, C., Rakap, S., & Crowe, C. (2011). Professional development in early childhood intervention. In C.

J. Groark (Series Ed.) & L. Kaczmarek (Vol. Ed.), *Early childhood intervention: Shaping the future for children with disabilities and their families: Vol. 3. Emerging issues* (pp. 169–204). Santa Barbara, CA: ABC-Clio/Praeger.

Snyder, P., Hemmeter, M. L., & McLaughlin, T. (2011). Professional development in early childhood intervention: Where we stand on the silver anniversary of PL 99-457. *Journal of Early Intervention, 33*, 357–370. doi:10.1177/1053815111428336

Snyder, P., Hemmeter, M. L., Meeker, K. A., Kinder, K., Pasia, C., & McLaughlin, T. (2012). Characterizing key features of the early childhood professional development literature. *Infants & Young Children, 25*(3), 188–212.

Snyder, P., & Wolfe, B. (2008). The big three process components of effective professional development: Needs assessment, evaluation, and follow-up. In P. J. Winton, J. A. McCollum, & C. Catlett (Eds.), *Practical approaches to early childhood professional development: Evidence, strategies, and resources* (pp. 13–52). Washington, DC: Zero to Three.

Sutherland, K. S., Conroy, M. A., Vo, A., Abrams, L., & Ogston, P. (2013). An initial evaluation of the Teacher–Child Direct Observation System: Measuring teacher–child interaction behaviors in classroom settings. *Assessment for Effective Intervention, 39*(1), 12–23. doi:10.1177/1534508412463814

Sutherland, K. S., McLeod, B. D., Conroy, M. A., Abrams, L. M., & Smith, M. M. (2014). Preliminary psychometric properties of the BEST in CLASS Adherence and Competence Scale. *Journal of Emotional and Behavioral Disorders.* doi:10.1177/1063426613497258

Sutherland, K. S., McLeod, B. D., Conroy, M. A., & Cox, J. R. (2013). Measuring implementation of evidence-based programs targeting young children at risk for emotional/behavioral disorders: Conceptual issues and recommendations. *Journal of Early Intervention, 35*(2), 129–149. doi:10.1177/1053815113515025

Trivette, C. M., Dunst, C. J., Hamby, D. W., & O'Herin, C. E. (2009). Characteristics and consequences of adult learning methods and strategies. *Research Brief, 3*(1), 1–33.

U.S. Department of Health and Human Services, Administration for Children and Families. (2012). *Advisory committee on head start research and evaluation: Final report*. Washington, DC: Author.

Williford, A. P., Vick Whittaker, J. E., Vitiello, V. E., & Downer, J. T. (2013). Children's engagement within the preschool classroom and their development of self-regulation. *Early Education and Development, 24*, 162–187. doi:10.1080/10409289.2011.628270

Yoshikawa, H., Aber, J. L., & Beardslee, W. R. (2012). The effects of poverty on the mental, emotional, and behavioral health of children and youth: Implications for prevention. *American Psychologist, 67*, 272–284.