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Abstract

Coaching for urban early career teachers (ECTs) offers promise and aligns with features of effective professional development to support the implementation of evidence-based practices. However, the functional components and key elements of coaching and coach supervision are not well specified in the literature. The goal of the current study was to examine adherence and feasibility of a coaching intervention designed to provide urban ECTs with concentrated support in classroom management and engaging learners – two instructional domains that are robust predictors of attrition (Ingersoll & Strong, 2011). Coaches (n = 6) worked with ECTs (n = 15) in three urban, high poverty elementary schools during the 2-year intervention. A mixed method design was employed, such that qualitative data (i.e., semi-structured interviews) and quantitative data (i.e., adherence measures) were collected concurrently, remained independent during analyses, and were integrated during interpretation (Creswell & Clark, 2007). Findings revealed that ECTs generally received the intended frequency and duration of coaching but with fewer opportunities for post conferences. Coach supervision, on average, was delivered with intended frequency, with variability across coaches. Thematic analyses highlighted coach provision of emotional and instrumental support, emphasized consistent coaching as critical, and that time was a significant barrier to ECT participation in coaching. Supervision promoted social support among coaches and provided opportunities to adapt the model to ECT needs.

Keywords: early career teachers; urban schools; mixed method; coaching; evidence-based practices; school mental health

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Studies document that many beginning teachers feel "lost at sea" with limited resources and supports to help them thrive in a demanding work context (Berry, 2004; Ingersoll & Strong, 2011; Shernoff et al., 2011a). Nationally, approximately 30% of new teachers leave the profession within 5 years of entry; in schools serving economically disadvantaged students, turnover rates are closer to 50% (Ingersoll & Strong, 2011; Ronfeldt, Loeb, & Wyckoff, 2013). Whether turnover results in migration (i.e., moving to another school) or attrition (i.e., leaving the profession of teaching), this chronic instability creates financial burdens for districts that must repeatedly divert scarce resources to recruiting, hiring, and training. These organizational disruptions can diminish commitment among teachers who remain and must absorb mentoring responsibilities for newer teachers, who in turn leave within a few years (Guin, 2004). Chronic turnover has also been linked to lower student achievement, a finding that is pronounced for underperforming minority students (Ronfeldt et al., 2013). Given students experience schools through teachers, coaching for urban early career teachers can enhance teacher effectiveness toward the goal of improving learning among disadvantaged students (Atkins, Hoagwood, Kutash, & Seidman, 2010; Crone & Teddlie, 1995).

Coaching (in the educational literature) and consultation (in the behavioral health literature) have been used interchangeably despite their different foci (Denton & Hasbruck, 2009). Consultation places a stronger emphasis on the triadic relationship between consultant-consultee-client and indirect services to students, while coaching focuses more directly on changing teacher practices and instruction (Denton & Hasbrouck, 2009; Joyce and Showers, 2002). In this study, coaching for early career teachers was operationalized as job-embedded, sustained, classroom-based support to enhance their instructional skills and use of evidence-

based practices (Joyce & Showers, 2002). Coaching is featured as an important post-training support that diverges from traditional didactic "train and hope" models common to schools and community mental health settings (see Becker, Bradshaw, Domitrovich & Ialongo, 2013; Hoagwood, Atkins & Ialongo, 2013; Nadeem, Gleacher, & Beidas, 2013). Coaching can support early career teacher effectiveness and longer-term retention via the provision of real-time, in vivo support as novices navigate the competing demands of their classrooms. Despite increasing enthusiasm for coach-based interventions, the specific characteristics and feasibility of coaching from the perspective of service deliverers (i.e., coaches) and recipients (i.e., teachers) remains largely unexplored (Beidas et al., 2013). The current study, therefore, describes the characteristics of coaching, in particular facilitators and barriers in high poverty, urban schools.

Coaching for Early Career Teachers

Few induction programs for early career teachers (ECTs, those with five or fewer years of experience) include coaching, which is in contrast to an emerging literature focused on the role of coaching in supporting literacy interventions (Casey, 2006), universal prevention programs (Becker et al., 2013), and targeted interventions to treat disruptive behaviors (Reinke et al., 2012). Failing to embed coaching into traditional induction support underestimates how much intensive, sustained support is required for ECTs to develop their instructional skills. Coaching for urban ECTs, who are vulnerable to tremendous stressors associated with teaching in high poverty communities, provides support when the learning curve is extremely steep as they experiment with new instructional practices and acclimate to an unfamiliar work environment (Shernoff, Marinez-Lora, Frazier, Jakobsons, Atkins, & Bonner, 2011a). An emerging literature highlights the connection between teacher well-being and student emotional and behavioral health (Jennings & Greenberg, 2009; Hamre & Pianta, 2005). A recent study with

a nationally representative sample of 10,700 first graders found students in classrooms lacking basic resources with teachers who experienced difficult relationships with colleagues had more learning, social, and behavioral problems (Milke & Warner, 2011). Given the negative impact that prolonged teacher stress can have on classroom climate and teacher-student relationships (Hamre & Pianta, 2005; Jennings & Greenberg, 2009) sustained, targeted support for urban ECTs is posited as a core resource for effective teaching and student mental health promotion.

Coaching was conceptualized as critical for ECTs to circumvent the "transfer of training" problem well documented in the professional development literature (Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012). Transfer of training occurs when trainees successfully generalize knowledge and skills acquired in one setting (e.g., workshop) to a new context (e.g., classroom). Coaching is theorized to maximize transfer by embedding guided practice, modeling, and demonstration, all of which are critical to skill development and transfer (Desimone, 2009). Joyce and Showers' (2002) meta-analysis of the impact of training and coaching on teacher practices revealed that coach-based professional development produced the largest transfer of new skills (95% of teachers demonstrated the new skill in their classroom), in contrast to training that included practice with feedback (5% transfer) or training covering theory and discussion (0% transfer). Furthermore, because coaching is job-embedded, teacher learning maintains close proximity to practice and is directly focused on authentic classroom challenges, which further promotes transfer (Penuel, Fishman, Yamaguchi, & Gallagher, 2007).

Given what the literature highlights as critical to skill transfer, social cognitive theory (Bandura, 1997) guided the coaching model, which emphasizes that learning takes place *vicariously* by observing others and *enactively* through guided practice. With social cognitive theory as the theoretical backdrop, key instructional components in the model included active

learning (i.e., modeling a strategy, co-teaching, providing performance feedback) combined with observation (i.e., watching ECTs implement a strategy or intervene with a student).

Gaps in the Coaching Literature

Several gaps in the coaching literature warrant further attention and provide the basis for the current study. First, despite widespread calls for coaching to enhance the implementation of evidence-based practices in usual care settings, the functional components and key elements of coaching are not well specified with regard to instructional elements, recommended dosage, role and function of a coach, and the boundaries of practice (Gallucci, Van Lare, Yoon, & Boatright, 2010; Owens et al., 2013). The coaching literature also provides limited insight into the facilitators and barriers to coaching and organizational policies and structures within schools that support and impede coaching (Gallucci et al., 2010; Owens et al., 2013). This is particularly important in urban, high poverty schools given the overwhelming service needs and challenges in adopting and implementing evidence-based practices (Atkins et al., 2010).

In addition, few peer-reviewed research studies have examined the processes by which coaches learn how to be effective in their role, or the mechanisms in place to ensure coaches have access to effective training and ongoing supervision (Gallucci et al., 2010). There is a parallel process operating with regard to how ECTs and coaches enhance their effectiveness, with the training and supervision literature emphasizing the critical role that systematic, ongoing, and differentiated training and supervision plays in the acquisition of skills and competencies (Schoenwald et al., 2009; 2011). Coaching was organized around the strongest predictors of attrition and designed to enhance ECT effectiveness in classroom management and engaging learners and connectedness to colleagues to enhance retention and commitment to teaching (Bryk & Schneider, 2002). Guided by the training and supervision literature, we extended the

constructs of effectiveness and connectedness to coaches via the provision of initial training and ongoing group supervision to ensure their effectiveness was maximized and isolation minimized (Schoenwald et al., 2009; 2011). Given the association between high-quality supervision and high-quality implementation of evidence-based practices, another goal of the study was to explore the value of regular supervision, which can form the basis of developing a coaching model that can be replicated in future randomized clinical trials and sustained over time (Beidas et al. 2013; Schoenwald et al., 2009).

The Current Study

The coaching model was part of a multi-component, 2-year intervention for ECTs working in urban schools (described in Method). The intervention was developed and iteratively refined to enhance its feasibility and effectiveness through a Development and Innovation grant funded by the Institute of Education Sciences (Shernoff et al., 2011a). A parallel, mixed method design was used to describe the coaching intervention and examine its feasibility (Creswell & Clark, 2007). Qualitative data (i.e., semi-structured interviews with ECTs and coaches) and quantitative data (i.e., adherence measures) were collected concurrently, remained independent during analyses, and were integrated during interpretation (Creswell & Clark, 2007). Mixed method approaches are recommended for examining feasibility when developing and piloting new interventions (Fabiano et al., 2013; Nastasi et al., 2007) and facilitated a more comprehensive and complete examination of our research questions than either quantitative or qualitative methods could alone. As such, qualitative methods were designed to enhance, extend, and elaborate upon observed quantitative trends (Creswell & Clark, 2007). With this in mind, the aims of the study included: (a) examining the extent to which the coaching model was implemented as originally designed with regard to dosage and adherence, (b) describing the

barriers and facilitators to implementing the coaching model in these high poverty urban schools, and (c) examining the extent to which supervision was implemented as intended and describing how coaches experienced the supervision model.

Method

Setting

Three elementary schools located in a large urban district in the Midwest participated in the study. University and district IRB approval was obtained prior to initiating the study. Unlike examining the efficacy of an intervention, which requires appropriate experimental or quasi-experimental design, the overarching goal of this study was to examine feasibility, and thus designed to provide evidence that the intervention was sufficiently promising to warrant a randomized trial. Therefore, the planned sample included three pre-kindergarten through eighth grade elementary schools. These schools were identified by screening 75 schools within this district who were eligible to participate in a prior mental health services reform project based on these criteria: 85% or more low income, average statewide reading scores below the 30th percentile (M = 28, SD = 3.8), and school population within one standard deviation of the district mean (M = 702, SD = 306) (Atkins et al., 2011). The first school for the current study was recruited during Year 1 and had participated in the comparison condition in the prior mental health services reform project referenced above. Reflecting the spirit of the developmental mechanism, we created the model in close partnership with the first school given the principal had expressed interest in ongoing research opportunities with our team. The remaining two schools were randomly selected from the list of 75 schools; the first and fourth schools we contacted were successfully recruited during Year 2. These two schools also provided extensive feedback during the study. Schools were 94% African-American, 97% free-reduced lunch, with

25% teacher mobility rates at the time of recruitment (District mean = 47% African-American, 87% free-reduced lunch, 19% teacher mobility).

Participants

Early career teachers. ECTs with five or fewer years of teaching experience were eligible to participate based on empirical evidence that teachers are most vulnerable to migration or attrition within the first three to five years of teaching (see Guarino, Santibanez & Daley, 2006). Fifteen ECTs consented (88% of eligible ECTs); one declined due to concerns regarding time commitments and another declined due to an impending medical leave. ECT recruitment consisted of informal meetings at schools to share information, answer questions, and invite discussion followed by formal consent, which occurred individually to reduce any potential discomfort around declining to participate. We attribute high consent rates to the significant effort we allocated to teacher engagement through ongoing and open discussion about the goals and procedures for research in addition to ECT motivation to receive this level of support. Relatively similar numbers of ECTs taught in younger (PreK - 3rd: n = 5) and older (4th – 8th: n = 4) grades. ECTs were mostly female (n = 13) and on average had 2.4 years of teaching experience (SD = 1.73; range = 0 to 5). Seven had Master's Degrees through alternative certification programs while eight had attended traditional preservice training programs. Seven ECTs were African American, seven were European American, and one was Asian American. Ninety three percent (14 of 15) remained at their respective schools during the 2-year intervention; one teacher's contract was not renewed after her first year of participation.

Coaches. Six coaches participated in the study; five were retired educators affiliated with a local college of education who were initially identified based on their experience working in schools with similar demographic characteristics and conducting feedback conferences and

classroom observations. Although coaches were hired with grant funds and not employed by the school district, school principals interviewed coaches after they met inclusion criteria and coaches completed school district screening procedures. Of the coaches initially contacted (N = 8), one declined to participate due to scheduling challenges and two did not meet inclusion criteria (i.e., inadequate experience working in high poverty, urban schools). The remaining five coaches had on average 31.8 years of experience (SD = 13, range = 9 to 40), three were female, three were European American and two were African American, and all had attained Master's Degrees. Two of the five participating coaches resigned after coaching for one semester due to responsibilities outside the project. Given this turnover, one graduate student with three years of experience consulting with urban teachers coached one ECT who entered the study late. Coaches were assigned to specific schools to minimize travel and asked to allocate the equivalent of one day per week or two half days to coaching, ideally on the same day to create a predictable schedule. Coaches were assigned an average of five ECTs on their caseload (SD = 2.53, range = 1-9) and spent an average of seven months coaching (SD = 5.08, range = 2-15). Figure 1 provides a timeline of participating teachers and coaches involved in the intervention.

Teachers Supporting Teachers in Urban Schools

Teachers Supporting Teachers in Urban Schools was a 2-year intervention designed to enhance ECT effectiveness in managing classrooms and engaging learners and connectedness to colleagues through three professional development opportunities (Shernoff et al., 2011a). The first included twice monthly group seminars in which peer-nominated mentors disseminated evidence-based classroom management and engagement practices to small groups of ECTs. The evidence-based practices were used in prior federally funded studies by the investigative team with K-5 urban teachers and adapted for use with pre-K to eighth grade ECTs (Atkins et al.,

2013; Cappella et al., 2011). Table 1 provides a brief description of those universal and targeted practices, which were drawn from the educational and mental health literatures (Domitrovich et al., 2008; Evertson & Weinstein, 2006). Second, monthly professional learning community meetings were offered to all teachers – not just ECTs. These meetings were facilitated by peer-nominated mentors to link novices with their larger network of colleagues and to promote shared norms regarding managing classrooms and engaging learners (Bryk & Schneider, 2002). Third, and the focus of the current study, ECTs participated in coaching, described below.

The Coaching Model

Coaching was designed to support implementation of the evidence-based classroom management and engagement practices and to nurture social connections with an experienced educator who served as a guide and support. The coaching model included classroom visits and conferences to complete a cycle of planning, teaching, and reflecting on instruction (Joyce & Showers, 2002). Classroom visits supported implementation of the evidence-based practices while pre and post conferences were used to plan for instructional activities, anticipate barriers to implementation, and reflect on progress (Joyce & Showers, 2002).

To enhance motivation and engagement, motivational interviewing strategies were integrated into the coaching model (Frey et al., 2011; Miller & Rollnick, 2002). Coaching goals were framed around increasing teachers' self-reflection and self-efficacy in using evidence-based practices to improve classroom management and student engagement. Coaches acted as collaborators, inviting ECTs to identify, organize, and prioritize professional development goals in addition to reflecting on implementation of selected practices. Coaches facilitated dialogue rather than taking an "expert role" and were encouraged to remain optimistic about ECTs' capacity for instructional change, to empathize with the inherent challenges of being a new

teacher, to affirm personal choices around instructional goals, and to interpret teacher resistance as a signal that coaching needed to change course to be more responsive to individual needs and goals for change (Frey et al., 2011; Miller & Rollnick, 2002; Reinke et al., 2012).

Coach Training and Supervision

Coaches participated in an initial two day training facilitated by the lead author and focused on introducing the evidence-based practices, conducting conferences and classroom visits, and supporting ECT learning. A coaching manual (available from the lead author) guided training and included templates for conducting coaching conferences, motivational interviewing strategies, and evidence-based practices. The lead (principal investigator) and fourth (postdoctoral fellow) authors facilitated group supervision once to twice per month for one hour. Supervision was designed to provide ongoing support and feedback to foster coaches' adherence to key instructional components (i.e., active learning and observation) and to troubleshoot barriers to coaching. Based on the objectives and format of supervision used by our team in prior research, supervision was structured and agenda-driven, with time allocated to reviewing ECTs' progress in meeting instructional goals and using evidence-based practices and problem-solving barriers to implementation (Schoenwald, Mehta, Frazier & Shernoff, 2013). Motivational interviewing strategies were infused into supervision as well. Supervisors modeled motivational interviewing techniques such as reflective listening, "rolling with resistance," maintaining empathy and optimism, and promoting self-efficacy and autonomy. Supervision also emphasized that choice, responsibility, and motivation for changing instructional practices resided within teachers rather than coaches (Frey et al., 2011; Miller & Rollnick, 2002).

Adherence Measures

Adherence measures were informed by research on implementation measurement and

designed to assess implementation content, format, and dosage, with an emphasis on developing measures that minimized burden and maximized efficiency (Schoenwald et al., 2009; 2011).

Coach logs. Coach logs were completed online at the end of each day of coaching. Coaching manuals along with anecdotal notes completed by coaches as they worked with ECTs facilitated completion of the logs. Coaches reported on the frequency and duration of classroom visits and pre or post conferences. Coaches selected the evidence-based practices covered during each ECT contact using drop-down menus. Logs required approximately 10 minutes to complete per ECT, and completion rates reached 98% (347 of 353 logs completed).

Early career teacher checklists. ECTs completed a monthly 16-item yes/no checklist summarizing their most recent pre conference, post conference, and classroom visit. Checklists assessed coach adherence to the two instructional components of the model: active learning (e.g., coach demonstrated an evidence-based practice in the classroom) and observation (e.g., coach watched you implement a practice in your classroom). Checklists required 10 minutes to complete, and completion rates reached 83% (424 of 509 logs completed). Mean adherence scores were computed across all ECT checklists by summing dichotomous data (yes-no the instructional component was used by the coach) for each instructional component.

Supervision logs. Supervision logs were informed by our team's prior work on supervision (Schoenwald et al., 2013) and completed by the lead and fourth authors in real time during group supervision. Supervision logs tracked coach attendance and measured the frequency and duration of supervision. These logs were also designed as a clinical tool to structure coaches' ongoing work with ECTs, including reviewing progress in meeting instructional goals and problem-solving barriers to implementation of the practices.

Semi-Structured Interviews

ECTs (*n* = 13 of 15, 87%) participated in semi-structured interviews three times (baseline, end of Year 1, and end of Year 2) to examine the perceived utility of coaching and the barriers and facilitators to the model (two ECTs participated in two interviews due to late enrollment or attrition). An interview protocol was derived from the professional development literature for ECTs (Joyce & Showers, 2002). Open-ended questions ("*Tell me about your experience with coaching*") elicited general information followed by probes (*"What parts of coaching have you found more and less helpful and why" and "how did coaching influence your effectiveness implementing the evidence-based practices"*). ECT interviews were conducted at schools by the lead author and lasted one hour.

Coaches (*n* = 4 of 5, 80%) also participated in semi-structured interviews once at the end of the study. Interviews focused on coaches' perceptions regarding their role and function, facilitators and barriers to coaching, and experience with training and supervision. General questions ("*Tell me about your experience being a coach"*) were followed by an introduction to each topic ("*What roles did you see yourself having as a coach"*) and corresponding open-ended probes (*"How effective did you feel supporting ECTs to use the evidence-based practices"*). Coach interviews also explored the value of regular supervision and reflecting the developmental nature of the study, included ways to improve the supervision model. Interviews with coaches were conducted at the university by the lead author and lasted approximately one hour.

Analytic Approach

Examination of primary outcomes related to feasibility and adherence (i.e., dosage, supervision, use of evidence-based practices, qualitative experiences) showed no differences between cohorts. Therefore, data were aggregated across Year 1 and Year 2 schools. Quantitative measures and analyses were informed by the literature on social learning and thereby examined

the extent to which ECTs had opportunities for active learning (modeling, demonstration) in addition to observation. Qualitative interviews and analyses were informed by the literature on self-efficacy and thereby examined the extent to which ECTs felt effective implementing evidence-based practices and the extent to which coaches felt effective in supporting ECTs. Quantitative data (i.e., coach logs, ECT checklists, and supervision logs) were analyzed with SPSS (V 20). Interviews were digitally recorded, professionally transcribed verbatim, checked against audio recordings for accuracy, and analyzed with the aid of Dedoose, a mixed-method analysis software program (Lieber, 2009). Thematic analyses followed Braun and Clarke's (2006) structured process for identifying and analyzing themes, including initial code generation, identifying themes, reviewing and revising themes, and refining themes and subthemes. The coding team was comprised of one female faculty (lead author), one female postdoctoral fellow (4^{th} author), one male psychiatry resident, and one female doctoral student (2^{nd} author). First, the coding team reviewed interviews to identify consistent, meaningful text excerpts for coding. Second, through an initial round of open coding, a start list of subcodes was developed by consensus, guided by the research questions (Miles & Huberman, 1994). Then the team developed a structured codebook, including operational definitions of subcodes, inclusion and exclusion criteria, and example text to maximize coder accuracy and intercoder agreement (Fonteyn et al., 2008). Weekly meetings were used to review and renegotiate subcodes as the codebook evolved through preliminary coding tasks. Next, pairs of coders independently coded interviews and met to review independently assigned subcodes. Low interrater agreement was addressed by clarifying, discussing, and re-establishing consensus on operational definitions followed by additional independent coding. Then, pairs of coders independently reviewed all excerpts associated with each subcode, applying the constant comparative approach to detect

thematic similarities and differences across interviewees to ensure internal coherence within each theme (Boeije, 2002). Frequency counts (illustrated in Table 2) represent the number of times ECTs and coaches expressed a sentiment that reflected the subcode. After analyses were completed, the coding team integrated results and drew inferences regarding the quantitative and qualitative trends. Interview data complemented dosage and adherence data, providing an interpretive aid to the quantitative patterns that emerged (Creswell & Clark, 2007). That is, qualitative data facilitated both the interpretation and elaboration of quantitative findings.

Results

Coaching Dosage

Coaching was planned to occur weekly during Year 1 for approximately 1.5 hours, tapering off to 1 hour every other week, and then monthly by end of the 2-year intervention. Classroom visits were planned for approximately 50 minutes, supplemented with 20-minute pre conferences and 20-minute post conferences. During Year 1, ECTs participated in slightly more than one coaching contact per week (5.07 monthly contacts, *SD* = 1.98; mean = 20.83 hours, *SD* = 8.81). During year 2, ECTs participated in twice per month coaching (2.83 monthly contacts, *SD* = 1.66; mean = 13.36 hours, *SD* = 8.84). Three ECTs received only one year of coaching (one cited time constraints, one was no longer working at the school during Year 2, and one opted for coaching with her assigned co-teacher). During Year 1, ECTs (*n* = 14) spent an average of 16.36 minutes per session in pre conferences (*SD* = 5.66), 53.21 minutes per session in classroom visits (*SD* = 20.49), and 14.71 minutes per session in post conferences (*SD* = 10.71), reflecting intended time allocated to classroom visits and slightly less time than planned in conferences. During Year 2, ECTs (*n* = 12) spent an average of 20.83 minutes per session in pre conferences (*SD* = 7.44), 42.58 minutes per session in classroom visits (*SD* = 20.44), and 11.91

minutes per session in post conferences (*SD* = 11.25), reflecting the predicted reduction in Year 2, but less time spent in post conferences than originally intended. Thematic analyses elaborated on how coaching time was used, with two subthemes converging across ECT and coach interviews related to the importance of consistent coaching and time barriers.

Consistent coaching. Interviews with ECTs (*n* = 12) and coaches (*n* = 3) revealed the importance of consistent coaching, defined as routine, prescheduled conferences and classroom visits. One coached explained, "*they have to know that Tuesday at 8:00 was the pre conference, we would review the practices and their lesson plan...I'd be in their room from 10:00 until 10:50, post conference after school at 3:00*" while an ECT explained "*it was so nice having someone come in every Thursday to offer help*." Coaches emphasized that consistency was critical to their role because it reflected a purposeful and deliberate approach to instruction and modeled the importance of planning with ECTs. One coach explained, "*consistent coaching forced teachers to prepare well and when they prepare well it [teaching] goes well*." Similarly, one ECT explained "*coaching helps me prepare better, because no matter how much I prepare, there is always something that will go wrong, so I have to have a Plan B. Every week, I counted on meeting with the coach [to make a Plan B], which I would not have done on my own*." Consistent coaching also created a sense of predictability in a sometimes chaotic work environment in which ECT schedules and responsibilities shifted without warning. Coaches emphasized that consistency was important because it communicated dependability and that coaching would take place regardless of the organizational transitions that ECTs experienced.

Time barriers. Despite the importance of consistent coaching, time barriers interfered with coaching. Coaches (*n* = 4) and ECTs (*n* = 13) highlighted that teacher schedules were

unpredictable, with last minute scheduling conflicts and impromptu staff meetings making it difficult to plan reliably for pre and post conferences. Teacher absences, workload, and stress also reduced ECT availability for coaching, which was difficult for coaches to regularly accommodate. This operated in direct contrast to coaches' predictable schedules that included, by design, one day per week or two half days per week at their assigned school. Coaches wanted to avoid burdening teachers with additional time commitments, but needed to maintain a predictable schedule. Coaches and ECTs both commented on making the most of what was available and compensating for missed meetings via email and phone calls. Overall, interviews highlighted that time constraints created conferences that felt "rushed" or vulnerable to cancellation. One ECT explained, "*during the school day, I don't have time to talk … I can't take my eyes off of students for fear that someone might go out the window. Sometimes the feedback [from the coach] was on the way to lunch, while I'm yelling at students*."

Adherence to Evidence-Based Practices

Table 1 illustrates the percentage of ECTs exposed to evidence-based practices at least once during coaching, reflecting variable exposure. For example, *ABCs of Behavior* (i.e., functional behavioral approach to classroom management) and *Setting Up for Centers* (i.e., developing centers that maximized engagement and minimized disruptive behaviors) were covered at least once by coaches for 100% of ECTs. In contrast, only 30% of ECTs were exposed to *Peer Tutoring* (Fuchs, Fuchs & Burish, 2000) and 40% to *School Home Notes* (Kelley & McCain 1995). Adherence was further understood via thematic analyses, which revealed an appreciation for the structure imposed by specific evidence-based practices along with the inherent limitations of those practices with specific students and teachers.

Evidence-based practices provided a structure. Interviews with coaches (n = 4) and to

a lesser extent ECTs (n = 7) highlighted that the evidence-based practices provided a structure, a common language, and a reasonable "*place to start,*" especially by creating classroom management routines and facilitating effective responses to student misbehavior. Coaches described the practices as well organized and facilitated their initial work with ECTs, with one coach explaining, *"I had 35 years experience with [School District] working with new teachers. But it was nice to see a range of strategies that we could put into practice immediately*." ECTs highlighted that because the practices included systematic instructions for implementation, this facilitated dissemination to future ECTs and other teaching staff who were interested in building their skills in managing classrooms and engaging learners. One ECT explained, "*there will be other people coming in that need help so we can pass it [the practices] on to them."*

Evidence-based practices required adaptation. Despite the important role that evidence-based practices played in launching the work with ECTs and addressing immediate behavioral concerns, coaches (n = 4) and ECTs (n = 10) acknowledged that exposure to these practices alone was insufficient; that is, coaches were necessary to help them "come alive." ECTs and coaches emphasized the need to adapt those practices to be more responsive to the unique needs of ECTs and students. For instance, disruptive student behaviors were noted to significantly impact the overall effectiveness of classroom-level strategies, and coaches and ECTs identified the need for additional targeted strategies to manage more severe behavioral problems. One coach explained, "*teachers have three or four students that were uncontrollable, and for whom the Good Behavior Game did not work, and we needed to find something for those students."* Coach and ECT interviews also highlighted that evidence-based practices had a "*shelf life*," implying their effectiveness sometimes diminished over time.

Adherence to Key Instructional Components

Mean adherence scores, computed by summing across dichotomous items on the ECT checklist (yes/no the instructional component was used), assessed coaches use of active learning and observation. Adherence scores were higher for Observation (70%) than Active Learning (39%). Quantitative adherence data was corroborated by ECT interviews echoing the need for coaches to play a more active role in their classrooms, including more time spent co-teaching lessons and providing constructive feedback. Thematic analyses also highlighted a distinction between observation combined with timely feedback versus observation combined with non-evaluative feedback as well as the importance of instrumental and emotional support.

Observation combined with timely feedback. ECTs (n = 9) and coaches (n = 3) reported that observation combined with timely post conference feedback provided a new perspective on the classroom and augmented what ECTs could feasibly "see" in terms of instruction, student behavior, and classroom dynamics. One teacher explained, *"I don't know how I am looking or acting and [the coach] notices things that I do not. Feedback helps you learn about your kids and help them with their behavior and stay on task."* During baseline interviews, the majority of ECTs (n =10) reported minimal pre-service training in classroom management (i.e., limited coursework and limited exposure to evidence-based practices targeting student disruptive behaviors). They also reported feeling overwhelmed by a complex classroom environment in which they needed to attend to multiple simultaneous events in a time sensitive manner. According to another ECT, "*coaching made me understand where some of the behaviors were coming from … people can tell you things you don't know, it doesn't immediately change what you do but it makes you think and eventually change it."* Immediate feedback was critical given the busy nature of their work, with one ECT explaining, *"feedback is most meaningful when it is*

immediate, but it didn't always happen. If it's not immediate 30,000 things have happened by the time you see the coach again."

Observation combined with non-evaluative feedback. Coaches (*n* = 4) and ECTs (*n* = 9) emphasized the importance of observations that were combined with non-evaluative feedback to allay anxiety related to high stakes evaluations that threatened ECT job security. One coach shared, *"teachers believe that anyone who comes in from within the system is there to evaluate them and ultimately to get rid of them*." Therefore, coaches conceptualized feedback as "*fine tuning*" and worked effortfully to provide non-judgmental, formative recommendations that focused on progress and mastery of incremental instructional skills as opposed to summative feedback regarding the extent to which the ECT had met longer-term goals. ECTs perceived external feedback from coaches (as opposed to feedback from colleagues or administrators) as unbiased and confidential. One ECT explained, "*just to have that sounding board…an outside voice. Sometimes [feedback] from the inside is biased.*"

Instrumental and emotional support. ECTs (*n* = 12) and coaches (*n* = 4) conceptualized instrumental and emotional support as critical to coaching. Instrumental support was operationalized as concrete support of routine activities occurring within the classroom and technical support to increase ECTs' effectiveness in using the evidence-based practices. One coach explained "*even though you're trying to review strategies and things that they need, you also want them to know, 'I'm going to get in there and work with groups of kids too'"* while another coach explained, "*I never minded rolling up my sleeves, digging in, and being concretely helpful*." Coaches and ECTs emphasized that instrumental support included active engagement in the classroom, in addition to functioning as a partner rather than an expert. One coach explained, "*if you sit in the back and take notes and come back later and tell them what you saw, that will*

only last for a couple weeks…but if you really want to make it work you have to get in there and … help them out." Another coach explained, *"teachers don't like experts coming in telling them how to do it. It was a partnership, we worked together as equals. 'I'm here to help you. I don't know it all. I have some strategies in my pocket that we can try*.'" Coach interviews highlighted that the majority of teachers have a good plan for instruction, and their role was to "*see if they can carry out their plan."*

Interviews further highlighted the positive impact that emotional support had on ECTs, including empathizing, listening, reassuring, and validating their experience. Conversely, when coaches were unable to tend to ECT emotional needs, this had a negative impact on the relationship. One coach explained, *"They need reassurance. 'You are going to make it through this. It's not the end of the world, everyone struggles their first year. Your second year always goes better,'"* while an ECT echoed, *"The coach cheers you on, guides you, helps you, says 'come on you can go one more round, you can do this one more day—it's going to be all right*."" Coach interviews highlighted that ECTs needed reminders that classroom functioning naturally ebbs and flows throughout the school year and even experienced teachers have challenging days or years because of difficult cohorts of students. One coach highlighted that her role was to help ECTs "*realistically appreciate that they will have ups and downs, good and bad days, and if they have a bad day, that doesn't mean that they backslid into unproductive instruction. You can do everything perfectly and still not have a good day, because you have 25 to 30 individual personalities* [in a classroom]." ECTs expressed validation from coaches who could bear witness to their classroom challenges: "*when somebody agrees with you and says, 'this child's behavior is a problem, I see it too' and was a former teacher in a similar school, you feel like you have an ally*." ECTs also expressed frustration when coaches were unable to validate their experiences,

"that was my problem with the first coach, she wasn't familiar with our school and gave me suggestions that were unsympathetic." Coaches, however, emphasized that effective coaching combined validation (emotional support) with active problem solving (instrumental support), as summarized here: "*Yes that child does have a problem, It's not just you, I can see it too. Now what are we going to do about it?"*

Coach Experience of Supervision

Group supervision was planned once to twice per month for one hour. Descriptive analyses of supervision logs collapsed across two years indicated that the median number of minutes per month of supervision for coaches was 60 (n = 1 coach received 38 minutes, n = 4 received 60 to 61 minutes, and n = 1 received 69.5 minutes per month). The number of supervision contacts per month varied substantially (median = 3.05; n = 2 coaches received 1.6 to 1.8 contacts per month, n = 3 had 2.71 to 4.0 contacts per month, n = 1 coach had 12.5 contacts per month). Coach interviews expanded our understanding of coaches' experience with supervision with four subthemes emerging, as described below.

First, group supervision was perceived as integral to coach effectiveness by providing opportunities for peer collaboration. Coaches (n = 4) stressed the benefit of receiving and providing input on one another's cases, "*We can help each other out. I got advice from other coaches and I could throw in some input*." Second, supervision provided opportunities for coaches to influence iterative revisions to the model, including additional evidence-based practices that could be incorporated as the intervention unfolded. Coaches were selected for their extensive experience working in high poverty schools; therefore, supervision provided a forum to draw on coaches' deep expertise. Coach interviews (n = 2) underscored that supervision facilitated the integration of their experiences and ideas, for example, "*I could throw in other*

things along the way or come up with things that could be valuable and discuss it with you [in supervision]. And you said, 'let's do it, let's add that to the model.'" Third, coaches (*n* = 3) reported that group supervision provided a platform to individualize the model and respond to the idiographic needs of ECTs. Evidence-based practices were considered a reasonable place to start "*but will not work for all teachers all the time.*" Supervisors invited coaches to recommend additional evidence-based practices to maximize the responsiveness of the model. For example, one coach shared that via supervision "*we identified specific contracts to deal with students who were not responding [to other practices*]."

Finally, coaches (*n* = 4) converged around the need for more coordinated, consistent communication and planning among supervisors, coaches, and school administrators (e.g., principals) to review strategies, troubleshoot implementation barriers, and identify additional indigenous resources that could be leveraged to support ECTs. On the one hand, coaches recommended inviting administrators to supervision meetings to address logistical barriers (e.g., unpredictable teacher schedules, impromptu meetings) and to provide a strong platform for integrating coaching into the broader school mission and goals. On the other hand, coaches wanted to avoid conversations in which they may be asked to critique ECTs, which could jeopardize their non-evaluative role and relationship; for instance, one coach explained, *"I would only want stress the positive. That they were great teachers working very hard."*

Discussion

Studies document that mandatory induction and mentoring programs have disappointed many ECTs by underestimating the intensive, sustained support needed to improve classroom practice (Berry, 2004; Ingersoll & Strong, 2011). This is exacerbated in high poverty schools where persistent stressors associated with teaching (e.g., accountability demands, lack of

material resources) are pervasive (Shernoff et al., 2011b). Coaching for ECTs offers promise and aligns well with features of effective professional development to promote learning and transfer (Penuel et al., 2007; Salas et al., 2012). However, the functional components and key elements of coaching are not well specified or understood. We examined feasibility early in the development process to more closely align the coaching model with the complexities of urban classrooms and to allow for iterative revisions in real-time (Hoagwood, Atkins, & Ialongo, 2002).

Coaching Dosage and Adherence

Implementation data suggested that coaching was delivered with intended frequency and duration, including weekly contacts with coaches and close to the total duration of minutes expected (84 instead of 90 minutes) during Year 1. During Year 2, as predicted, contact with coaches reduced to closer to twice per month, with variability across ECTs. These data provided strong evidence of feasibility in three schools situated in communities of concentrated urban poverty, where barriers to adoption and implementation of evidence-based practices are extensively documented (Cappella et al., 2011). Variability in frequency and duration of coaching across ECTs suggested "one size did not fit all." ECT preferences, class composition, and existing organizational supports may account for variability in coaching dosage. Given the developmental nature of the study, these implementation data provide a metric for examining and refining dosage in a planned RCT (Fabiano et al., 2013; Hoagwood et al., 2002).

The distribution of time across coaching activities revealed less time spent in conferences, particularly post conferences, than classroom visits. This finding is corroborated and explained by qualitative interviews, which identified time barriers as interfering with coaching. Limited time for meetings during the school day created conferences that were rushed or vulnerable to being cancelled. The literature documents the "coaching on the fly" phenomena

in schools that developers must both anticipate and accommodate (Joyce & Showers, 2002). Time barriers were exacerbated by coach schedules, which were routinized by design (reflecting their employment contracts) but misaligned with ECT schedules, which were unpredictable and inconsistent. The iterative design allowed us to incorporate more flexibility into coach-ECT meetings, for instance by increasing the frequency of phone contacts and email. Future iterations will require more flexibility in coaching schedules, more leadership support for conferencing during the school day, and more effort to harness technology (e.g., Skype) to circumvent time barriers that interfered with teacher-coach interactions.

ECTs viewed active learning as a critical ingredient of coaching, and coaches viewed active learning as a primary role for a coach. Surprisingly, then, adherence data revealed fewer opportunities for active learning compared to observation, perhaps reflecting the aforementioned time barriers to conferences and missed opportunities to plan for demonstrating and co-teaching the evidence-based practices. A recent study of consultation with therapists learning evidence-based practices revealed that active learning, including role plays, demonstrations, and simulations, were perceived by therapists as unhelpful due to performance anxiety and concerns about being evaluated (Beidas et al., 2013). Thematic analyses revealed coaches were especially sensitive to ECTs' struggles particularly with classroom management, and we suspect they may have de-emphasized modeling and co-teaching to avoid undermining ECTs' authority in the classroom. Future iterations of the coaching model will address this discrepancy by involving school leadership to augment time spent in conferencing during the school days. In addition, training and supervision for coaches will focus more explicitly on balancing instructional activities to increase active learning and opportunities for performance feedback without creating anxiety or undermining ECTs' role and status within the classroom.

Adherence data revealed more coaching time was allocated to evidence-based behavior management strategies than engagement strategies. Thematic analyses emphasized that ECTs struggled to manage their classrooms; in particular, disruptive behaviors were common and difficult to manage This finding is not surprising and perhaps reflects the convergence of two literatures, the first of which documents that new teachers consistently rank disruptive behaviors as highly stressful and a top motive for leaving teaching (Ingersoll & Strong, 2011; Shernoff et al., 2011a) coupled with a second literature on teacher preservice training that shows limited attention to behavior management (Joyce & Showers, 2002). Thus, ECTs may have had more familiarity and comfort with engagement strategies (e.g., differentiated instruction), and thus prioritized behavioral management practices in response to training deficits and classroom needs.

Teachers' skills in classroom management and the cultivation of positive classroom climate has been linked to positive student outcomes. For instance, at-risk students placed in classrooms with teachers who are instructionally and emotionally supportive can perform on par with their lower-risk counterparts (Hamre & Pianta, 2005), while students in classrooms with limited resources, and in which teachers experience less respect from their peers, demonstrate more social, behavioral, and academic problems (Milkie & Warner, 2011). Promoting ECT capacity to manage classrooms and engage learners is also directly related to instructional improvements, as the best classroom management comes from the best instruction and student engagement in that instruction.

Coach Role and Function

Findings from the current study also emphasized the role of instrumental *and* emotional support in coaching ECTs. Coaching was originally conceptualized as a mechanism to support implementation of evidence-based practices, reflecting a literature that shows technical support is

central to teacher perceptions of coach quality, particularly in the deployment of evidence-based practices in schools (Marsh et al., 2012). While indeed our coaches viewed their role as providing instrumental support (e.g., active problem solving in real-time), by design the coaching model was flexible enough to allow for broader support, and thematic analyses suggested that emotional support was perceived by both coaches and ECTs to be equally important, enhancing teacher confidence and providing reassurance that their experience as a novice was normative. Although psychological support is not typically emphasized as a core function of coaches (Denton & Hasbrouck, 2009), technical support was deemed as necessary but insufficient given the school context and classroom challenges facing ECTs in our sample. These findings resemble those in the mental health literature related to nonspecific treatment factors (e.g., therapeutic alliance, empathy) that lay the foundation of trust and collaboration and the role that stress management, work-life balance, and promotion of teacher mental health practices can play in supporting ECT effectiveness and student learning (Shernoff et al., 2011b). Wehby, Maggin, Moore and Robertson (2012), for example, identified strong teacher-coach alliance as not only directly impacting teachers' fidelity to evidence-based practices but also moderating the impact of teacher burnout.

An emerging literature also emphasizes the link between teacher well-being and student mental health (see Jennings & Greenberg, 2009; Wehby et al., 2012) with prolonged teacher stress associated with negative classroom climate in which disruptive behaviors are inadvertently reinforced and prosocial behaviors de-emphasized (Byrne, 1994). Prolonged teacher stress and dissatisfaction with the work context is also associated with teacher attrition (Montgomery & Rupp, 2005). Coaches' attentiveness to the emotional challenges experienced by ECTs, and ECTs' experience that coaching contributed to increased mastery of evidence-based practices

together suggest that coaching can play an important role in improving teachers' instructional skills and work satisfaction along with promoting enhanced outcomes for students.

Coach Professional Learning

Quantitative analyses suggest group supervision was delivered as scheduled and with the intended duration, but with substantial variability in the number of contacts per month between supervisors and coaches. Although group supervision was planned to occur once to twice per month, participating coaches had diverse professional experiences and learning needs. Although some coaches acclimated to their role with ease, coach turnover suggested the need for a flexible, responsive supervision model in which some coaches received more extensive, field-based support and active learning opportunities to maximize their effectiveness. This finding is in direct contrast to how coaches are typically conceptualized in the literature – as established experts who by virtue of their experience are equipped to support other educators (Gallucci et al., 2010). Findings from this study emphasize the differentiation needed to support coaches and that regular supervision not only provided opportunities to share the model and adapt the services for ECTs but also to develop the technical skills of coaches as well.

Thematic analyses of interviews with coaches highlighted that one of the most important aspects of supervision was the opportunity to collaborate with fellow coaches and supervisors. Group supervision facilitated the development of professional relationships, and coaches conceptualized supervision as collaborative (versus expert-based) and bidirectional, one in which coaches both received and provided support. These findings are consistent with a burgeoning literature on the role of professional learning communities to support dissemination and implementation of evidence-based practices in routine care settings (Shernoff et al., 2011a; Beidas et al., 2013; Nadeem et al., 2013). In addition, supervision provided coaches with an

opportunity to individualize services to the unique needs of ECTs. These results reflect a growing literature on mental health services and the utility and necessity of supervision to promote implementation quality (Schoenwald et al., 2009). Although the current coaching literature has few examples of systematic models for supervision, there is accumulating evidence that supervision makes an independent contribution to service quality and outcomes (Schoenwald et al., 2009; 2011). Findings from this study underscore that supervision can build the technical skills of coaches while providing systematic opportunities for social support (Beidas et al., 2013).

Limitations

Several limitations are important to acknowledge. First, coaching was one part of a multi-component intervention supporting urban ECTs, and these analyses do not examine the incremental value of coaching over and above the other service components or the impact of coaching on teacher practice. The goal of this manuscript was to closely examine the feasibility of coaching toward understanding how and under what conditions coaching can support ECT professional development. Second, the small sample size, drawn from three elementary schools limits the generalizability of findings to other urban schools, high schools, or novices. Although multiple methods and informants were utilized, future studies will include a more rigorous test of the model and will allow for cross-validation of findings from this study to a larger number of more heterogeneous schools. In addition, coaches were interviewed only at one time point and retrospectively as opposed to prospectively, with retrospective methods vulnerable to errors in recollection. Coach turnover required us to supplement with a graduate student who did not resemble the remaining five coaches with regards to teaching or administrative experience. However, close examination of adherence and supervision data suggests that the graduate-

student coach was comparable to other coaches with regards to frequency and duration of coaching contacts and amount of supervision received.

Finally, coaches were paid with grant funds and thus reflect the least sustainable part of the intervention. Usual care coaching in schools incorporates diverse models for recruiting and paying external coaches. Among them, indigenous teachers and/or administrators often allocate part of their time to coaching colleagues, which has advantages related to enhanced sustainability and flexibility to accommodate changes in ECT schedules. However, findings from the current study also underscore potential drawbacks to relying on indigenous coaches whose dual role as colleague or administrator, responsible for high stakes evaluations or employment decisions, may interfere with ECTs comfort or desire to share details associated with their classroom challenges. This could lead to observations and conferences that are anxiety-provoking rather than helpful (Gallucci et al., 2010).

Future Directions and Conclusions

Collectively, our findings have several implications for future iterations of coaching in urban schools. First, despite early attention to the involvement of school leaders and their significant enthusiasm for coaching, future iterations will include ongoing planning with administration to allocate more time during the instructional day for conferencing and to help ECTs prioritize coaching activities in the face of competing demands and unpredictable schedules. The school mental health literature similarly emphasizes the need for organizational support for coaches at multiple levels (e.g., school, region, district) appropriate to their role and function (Domitrovich et al., 2008, Nadeem et al., 2013; Owens et al., 2013).

Technological advances that embed virtual training for ECTs may also enhance the

pedagogical strength of the model by providing more opportunities for active learning and by circumventing persistent time barriers associated with intervention deployment in schools (Shernoff et al., 2011a). Recent advances in technology provide a promising supplement to live coaching and traditional on-the-job training for ECTs in which they can hone their instructional skills with "practice" students or avatars, in a virtual training environment (Dede, 2009). The investigative team is currently pursuing this line of research, hypothesizing that harnessing technology can improve coaching feasibility by allowing teachers to practice developing these skills outside of the instructional day. Such models also leverage active learning opportunities by incorporating reflection, problem solving, and practice with immediate feedback (Dede, 2009). In light of the increasing needs and depleting resources facing high poverty schools, virtual training has the capacity for broad dissemination to more seasoned (mid-career and veteran) teachers or other geographic areas (e.g., rural schools) with minimal costs associated with maintenance after the initial investment in development is made (Cukier, 1997). Given live coaching is costly and the least sustainable part of this model, it could be reserved for ECTs with more intensive needs or those less responsive to virtual support.

In conclusion, the current study addressed the urgent, unmet needs facing ECTs working in high poverty urban schools and the increased national emphasis on induction programs and implementation of evidence-based practices. Findings provide preliminary evidence regarding the feasibility and role of coaching within a multi-component intervention, developed in real time with the implementation context in mind (Cappella et al., 2011; Hoagwood et al., 2002). In addition, findings fill a gap in the coaching literature by identifying the functional elements and key components of coaching ECTs in addition to coach supervision.

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Table 1

Adherence to Evidence-Based Practices

Name	Description	Exposure to EBPs
ABCs of Behavior	Functional behavioral approach to classroom management emphasizing antecedents and consequences (author omitted).	100
Setting Up for Centers	Creating centers that maximize engagement and prevent behavior problems (Tomlinson, 2000).	100
Other Behavior Management	General strategies such as giving clear directions and devising optimal classroom rules.	93
Good Behavior Game	Classwide contingency management system (Barrish, Saunders, & Wolf, 1969).	87
Differentiating Instruction	Tiered instruction at students' instructional level (Tomlinson, 2000).	87
Tootles/Shout Out Wall	Students report peers' positive behaviors (Rubenstein et al., 1999).	73
Other Engagement Strategies	General strategies to maximize learning time, on-task behavior, and engagement.	67
Physical Arrangement	Arranging classroom to maximize teacher oversight and prevent disruptive behaviors (Evertson & Weinstein, 2006).	60
Good News Notes	Certificate sent home reinforcing appropriate behavior (Rubenstein et al., 1999).	53
Home-School Partnerships	Promotion of parent involvement via welcome letters, regular communication, and productive conferences (Sheridan & Kratochwill, 2007).	53
School-Home Notes	Student earns rewards at home based on school behavior (Kelley & McCain, 1995).	40
PALS/Reciprocal Peer Tutoring	Readers paired at instructional level of lower performing student, higher performing student tutors (Fuchs et al. 2000).	30

Note. EBPs = Evidence-based practices. Right column reflects the percentage of ECTs exposed to the evidence-based practices at least once during coaching.

Table 2

Frequency Counts for Subthemes from Semi-Structured Interviews

Themes and Subthemes	Total	ECTs	Coaches
Coaching Dosage			
Consistent coaching	15	12	3
Time barriers	17	13	4
Adherence to the Evidence-based Practices			
EBP provided structure	11	7	4
EBP required adaptation	14	10	4
Adherence to Key Instructional Components			
Observation combined with timely feedback	12	9	3
Observation combined with non-evaluative feedback	13	9	4
Instrumental and emotional support	16	12	4
Coach Experience of supervision			
Peer collaboration	--	--	4
Opportunities to influence the model	--	--	2
Facilitated individualization of the model	--	--	3
Need for more coordination with leadership teams	--	--	4

Note. Numbers represent frequency counts. -- = N/A