Teachers Supporting Teachers in Urban Schools: What Iterative Research Designs Can Teach Us

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Abstract. Despite alarming rates and negative consequences associated with urban teacher attrition, mentoring programs often fail to target the strongest predictors of attrition: effectiveness around classroom management and engaging learners; and connectedness to colleagues. Using a mixed-method iterative development framework, we highlight the process of developing and evaluating the feasibility of a multi-component professional development model for urban early career teachers. The model includes linking novices with peer-nominated key opinion leader teachers and an external coach who work together to (1) provide intensive support in evidence-based practices for classroom management and engaging learners, and (2) connect new teachers with their larger network of colleagues. Fidelity measures and focus group data illustrated varying attendance rates throughout the school year and that although seminars and professional learning communities were delivered as intended, adaptations to enhance the relevance, authenticity, level, and type of instrumental support were needed. Implications for science and practice are discussed.

Chronic turnover among new teachers is particularly alarming, with up to 23% of public school teachers leaving within their first five years of teaching—14% migrating to other schools and 9% leaving the profession altogether (Keigher, 2010). This "revolving door" (Ingersoll, 2001) is exacerbated by new teachers being placed in the hardest-to-staff schools situated in high-poverty, urban communities where one-third to one-half of teachers leave within their first five years (Barnes, Crowe, & Schaefer, 2007; Borman & Dowl-

ing, 2008). Stressors related to teaching in urban schools are well documented, including overcrowding, large class sizes, deteriorating conditions, and large numbers of students with unmet learning and mental health needs (Boyd & Shouse, 1997; Cappella, Frazier, Atkins, Schoenwald, & Glisson, 2008; Kataoka, Zhang, & Wells, 2002; Shernoff, Mehta, Atkins, Torf, & Spencer, 2011).

Chronic attrition creates financial hardships for urban districts, where scarce resources must be diverted to recruiting, hiring, and training (Barnes et al., 2007). Costs associated with teacher turnover in Chicago Public Schools, for example, are estimated between 76 and 128 million annually (Barnes et al., 2007). Whether turnover results in migration or attrition, chronic discontinuity in staffing at the school level can create organizational instability, in that teachers who remain begin to view their workplace as undesirable and can experience weak organizational commitment (Kardos, Johnson, Peske, & Kauffman, 2001). Regrettably, chronic turnover falls hardest on students, who are dependent on high-quality educators yet commonly taught by inexperienced teachers overwhelmed by the stressors of urban schools and likely to leave within those first few years (Smith & Ingersoll, 2004). Value-added student achievement data, for example, documents that achievement gains are influenced more by assigned teacher and teacher effectiveness than class size or composition and that teachers with the strongest academic backgrounds, a characteristic most often associated with student achievement, are the most likely to leave (Borman & Maritza Dowling, 2008; Rivkin, Hanushek, & Kain, 2005).

Empirical Predictors of Teacher Turnover

Despite the alarming rates and negative consequences associated with teacher attrition, current induction programs and professional development for new teachers often lack concentrated, sustained support targeting the most robust empirical predictors of attrition. Given mounting evidence suggests that students ex-

perience schools through teachers via the connection between effective instruction and academic success, targeted support for teachers working in high poverty, urban schools is critical to mental health promotion for at-risk children (see Atkins, Hoagwood, Kutash, & Seidman, 2010; Crone & Teddlie, 1995; Shernoff et al., 2011). In this article, we highlight the development and refinement of a multi-component service model in which early career teachers are linked with peer-nominated mentors [key opinion leader (KOL) mentors] and a coach who provide intensive classroom support in evidence-based classroom management and motivation practices to promote students' behavior and academic learning as well as with the larger network of teachers to moderate the sense of uncertainty and turbulence associated with being a new teacher in an urban school.

Effectiveness in Classroom Management

Teachers' skills in classroom management (e.g., order and discipline, environment and climate, transitions) are related to student achievement through their impact on effective instruction and opportunities to learn (Creemers, 1994; Wang, Haertel, & Walber, 1997). However, beginning teachers consistently rank classroom management and student misbehavior as the most stressful, complex, and pressing issue they face and a top reason for leaving their jobs (Ingersoll, 2001). Several studies have documented, for example, that novices attend more to disruptive behavior, rely more on punitive discipline strategies, and struggle to monitor simultaneous classroom events when compared to more experienced teachers (Sabers, Cushing, & Berliner, 1991; Yoon, 2002). Building new teachers' skills and confidence in classroom management is particularly crucial for urban educators, where prevalence rates for disruptive behaviors are almost three times national estimates (Tolan & Henry, 1996).

Effectiveness in Motivating Students

Perceptions that students are unmotivated and disengaged is also a key predictor of

attrition among new teachers (Ingersoll, 2001). Unmotivated students who exert little effort and give up quickly when challenged are a major concern in urban, low-income schools (Jones & Sandidge, 1997) and present significant challenges to novices (Good & Brophy, 2003). Evidence suggests that when new teachers experience early setbacks, they invest less effort in teaching, are more critical of students, and resist trying new strategies (Allinder, 1994; Stein & Wang, 1988). Studies also document that teachers' self-efficacy beliefs related to student engagement and learning are related to student achievement and motivation (Stipek, 1996), teacher commitment (Coladarci, 1992), and longer term retention (Burley, Hall, Villeme, & Brockmeier, 1991).

Connectedness to Colleagues

Feeling ineffective in the classroom is exacerbated by the alienation and isolation that often characterizes teaching. Although new teachers are arguably the most at risk for experiencing social isolation and the most dependent on meaningful collaboration with their colleagues, the cellular structure of schools often leads to teaching in isolation and struggling privately with problems (Johnson & The Project on the Next Generation of Teachers, 2004; Lortie, 2002). Studies of beginning teachers highlight that many feel "lost at sea" with few resources to help them survive (Berry, 2004; Kauffman, Johnson, Kardos, Liu, & Peske, 2002). New teachers often describe their work as solitary, with few opportunities to reflect on instruction, coteach, or plan lessons with colleagues (Johnson & Birkeland, 2003; Kardos & Johnson, 2007). The Project on the Next Generation of Teachers (2004), dedicated to developing new methods for supporting and retaining high-quality educators for the past two decades, consistently identifies new teachers' perceptions regarding collegial connections, faculty cohesiveness, and a supportive school community as critical to deciding to remain in teaching (Kardos et al., 2001; Kardos & Johnson, 2007). A longitudinal study of 50 first- and second-year teachers in the state of Massachu-

setts working in a wide variety of elementary, middle, and high schools documented that new teachers were more likely to remain in teaching and at their current school when they experienced frequent interactions among faculty and perceived shared responsibility for student learning and school improvement (Kardos et al., 2001). In the current study, we propose that collegial connections are a conduit to building skills that lead to effectiveness and foster a sense of belongingness needed to promote long-term commitment to teaching.

Building on Indigenous Resources via the KOL Mentor

In large urban districts, new teachers often participate in induction programs focused on logistics and designed to deal with large numbers of recruits at once. Reviews of the literature highlight that when mentoring is part of induction, theoretical or empirical justification for selecting and matching mentors with mentees is lacking (e.g., Ingersoll & Kralik, 2004). Instead, mentors are selected based on seniority to fulfill policy requirements, with limited regard for the technical skills necessary to disseminate information and support novices. One alternative involves selecting mentors who are KOLs, designated by peers as influential and socially connected (Atkins, Frazier et al., 2008; Rogers, 2005). KOL models extend current mentoring practices by activating peer-nominated leader teachers or "near peers" to disseminate evidence-based practices to colleagues (Atkins, Graczyk, Frazier, & Adil, 2003; Atkins, Frazier et al., 2008; Neal et al., 2008; Neal, Neal, Atkins, Henry, & Frazier, 2011). KOLs are well positioned to impact classroom practices and facilitate social connections for new teachers, and in the resource-limited environment of urban schools, capitalize on indigenous resources to build school capacity and support the ongoing dissemination of effective practices (Atkins et al., 2003, 2010).

Classroom-Based Support via the Coach

Although KOL mentors are well-positioned to support new teachers because of their
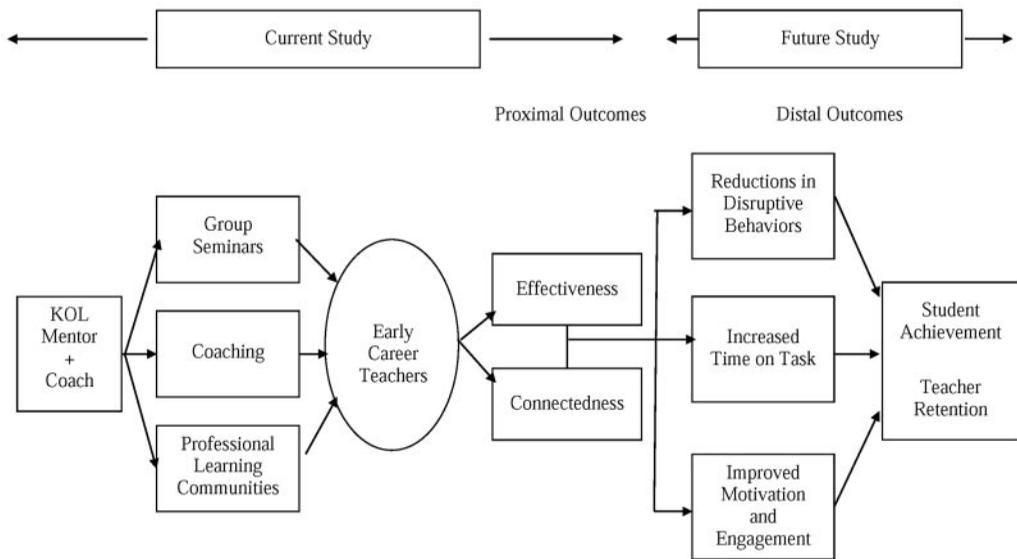
Figure 1. Conceptual model representing the hypothesized relationship between the three service components (i.e., Group Seminars, Coaching, and PLCs) and proximal teacher outcomes related to effectiveness and connectedness and distal student learning and behavior outcomes in addition to distal teacher outcomes related to retention.

influential status and social connections, several practice constraints (e.g., extensive duties given their influential role; typical teaching assignments; district policies prohibiting district employees from participating in grant-related activities during contract hours) necessitated embedding external coaches hired with grant funds into the original service model. The coaching model was developed based on theoretical and empirical support for ongoing, classroom-based, modeling, practice, and guided feedback to promote the generalization of knowledge and skills gained from professional development into the classroom (Andrzejewski, Kirby, Morral, & Iguchi, 2001; Joyce & Showers, 2002; Poglinco et al., 2003). A core feature of coaching was ensuring adequate opportunities for intensive, sustained support to enhance new teachers' effectiveness (Poglinco et al., 2003).

Current Study

Teachers Supporting Teachers in Urban Schools is a 3-year study funded by the Insti-

tute of Education Sciences. The goals of the study include developing, adapting, and testing the feasibility and impact of a service model for early career teachers designed to increase their effectiveness in classroom management and motivating learners and connectedness to colleagues given the central role that cohesion, trust, and belongingness plays in teaching (Bryk & Schneider, 2002). Figure 1 (left side) illustrates the hypothesized relationships between the core service components and proximal teacher outcomes of interest during this initial development phase, while the right side depicts hypothesized distal student and teacher outcomes relevant to a rigorous test of the model in future studies. A fundamental assumption of the model is that social relationships are crucial for novices not only because they are a conduit for building skills that lead to effectiveness, but because connections with colleagues fosters a sense of belongingness within the workplace necessary to engender longer-term commitment to teaching. Social cognitive theory guides the model

(Bandura, 1997), which proposes that learning occurs vicariously by observing others who serve as models and enactively by learning from doing. In this study, we argue that enhancing new teachers' perceptions regarding their ability to be effective with students and to develop positive relationships with colleagues is crucial to retention. Otherwise, new teachers working in highly distressed urban schools are left with few incentives to work through the inevitable challenges that arise. The service model is theorized to directly impact new teachers' effectiveness and connectedness via three core components: group seminars, coaching, and professional learning communities (PLCs).

Group Seminars

Group seminars were designed to occur twice per month for early career teachers, with the goal of disseminating evidence-based classroom management and student motivation strategies (a complete list of evidence-based strategies used during Year 1 is available from the first author). KOL mentors were theoretically in the best position within the school to lead the group seminars and influence new teachers' practice, and the coach was invited to attend group seminars to provide additional support and to plan for more in depth coverage of strategies in the context of coaching.

Coaching

Regular classroom-based coaching for early career teachers by veteran teachers hired with grant funds was designed to provide additional opportunities for ongoing, real-time modeling, demonstration, and coteaching of the evidence-based strategies introduced during the group seminars and tailoring the curriculum to new teachers' individual needs. Classroom visits by the coach were central to coaching activities, supported by pre- and postconferences for planning and reflecting on those classroom visits (Andrzejewski et al., 2001; Joyce & Showers, 2002; Poglinco et al., 2003).

PLCs

PLC meetings were scheduled monthly for all faculty—not just new teachers—and embedded reflective dialogue, staff collaboration, and collective responsibility for school improvement into existing site-based professional development (e.g., Bryk, Camburn, & Seashore Louis, 1999). PLCs were led by KOL mentors and designed as a deliberate induction mechanism targeting new teachers' effectiveness through focused discussions and exposure to evidence-based strategies related to classroom management and engaging learners while simultaneously promoting connectedness with colleagues. Collective responsibility for school improvement was infused through participants' developing PLC ground rules, articulating school-wide norms for behavior and learning, and prioritizing PLC topics. An overarching PLC theme was that if one colleague was struggling, teachers were collectively responsible for supporting that teacher—in the same spirit that student learning was the responsibility of all school personnel.

Complimentary Role of KOL Mentors and Coach

Effectiveness and connectedness served as the foci of concentrated efforts to support new teachers working in urban schools and the KOL mentors played a critical role in bridging the core service components and addressing persistent concerns about how to sustain programs over time (Annie E. Casey Foundation, 2002). The role of the KOL mentor and coach related directly to our theory of change via mentors' central role in promoting interactions between early career teachers and their colleagues, and through their leadership of the PLC meetings and group seminars designed to foster a sense of belongingness in the workplace while coaches promoted new teachers' effectiveness through real-time, classroom-based support. Mentors and coaches also helped promote new teachers' effectiveness around the predictors of attrition through vicarious and enactive learning opportunities.
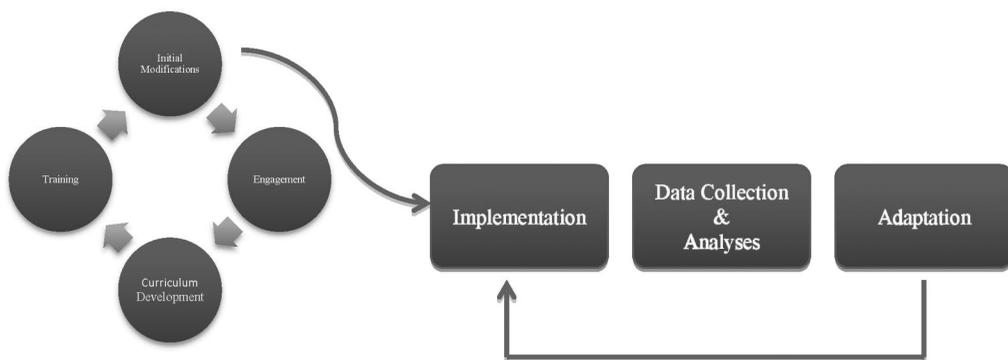
Figure 2. Year 1 iterative model of program development and adaptation

Year 1 Activities

Year 1 activities provided an opportunity to test the initial feasibility of the model while also enhancing its contextual fit and ensuring the model reflected the needs, resources, and capacity of our school partners (Hoagwood, Burns, & Weisz, 2002). Contextual fit was operationalized as the alignment of the model and practices subsumed within the model with the values, skills, and capacity of teacher participants (Albin, Lucyshyn, Horner, & Flannery, 1996; Benazzi, Horner, & Good, 2006). Using a mixed-method iterative development framework (see Protheroe, Bower, & Chew-Graham, 2007; Rounsaville, Carroll, & Onken, 2001), the current article describes Year 1 development, piloting, and adaptation of the model in partnership with one urban school, focusing on examining (1) the extent to which the core components were delivered, (2) teacher satisfaction with the model, and (3) key adaptations to enhance the contextual fit of the model.

Iterative Program Development

Figure 2 highlights the iterative program development process followed during Year 1, which was comprised of (1) engagement, (2) curriculum development, (3) training, and (4) initial feedback and modifications. These initial phases proceeded in a fluid, ongoing, and iterative manner. That is, the engagement of our community partners, development of the curriculum, training of service providers, and informal feedback occurred simultaneously and continuously; we cycled through this process before piloting the curriculum and collecting formal data to evaluate fidelity and teacher satisfaction.

Engagement

Although the relationship between the research team and our school partners through a prior grant likely facilitated our initial entry into the school, those relationships grew and evolved over time, both fostering and influencing subsequent phases of the study. In addition, as described earlier, a key goal of the model was enhancing and facilitating connectedness within the school—among classroom teachers, mentors, early career teachers, and coaches. Diffusion of innovations theory suggests that through relationships, teachers are encouraged to try innovative practices; thus, support and guidance around implementation was expected to strengthen teacher relationships and lead to greater motivation to experiment with new strategies (Rogers, 2005).

Engagement with our school partners began with meetings twice per month with the principal, assistant principal, mentors, and guidance counselor during Spring 2009, in preparation for piloting the model the following fall. Because our investigative team had partnered with the school in a previous study, we were able to capitalize on that relationship, which likely accelerated the engagement

phase for the current work. Early meetings involved highlighting strengths, needs, and existing school and district resources targeting classroom management and motivating learners; identifying existing school-wide norms around instruction and behavior; and coalescing around school goals and priorities for professional development activities. In addition, our school partners provided extensive feedback on multiple drafts of the curriculum, problem-solved anticipated barriers to teacher participation, and established procedures for the leadership team to genuinely endorse the curriculum.

Curriculum Development

Three curricula were developed, reflecting the most current literature on classroom management and motivating learners, and corresponding to the three core service components (i.e., group seminars, coaching, and PLCs). All three curricula were developed with ongoing informal feedback by the school leadership team related to school norms and goals around instruction. Group seminars focused on identifying and altering antecedents to disruptive behaviors via clear rules, routines, and expectations, and applying consistent consequences (Evertson & Weinstein, 2006). Coaching focused on providing classroom-based modeling and feedback to teachers and embedded reflective practice toward the goal of enhancing new teachers' ability to analyze and identify areas of strength and need to enhance effectiveness. The PLC curriculum was modeled on the Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2007), a reliable and standardized measure of classroom processes associated with social and academic development that is also used extensively as a professional development tool (Pianta, Mashburn, Downer, Hamre, & Justice, 2008). The PLC curriculum was developed in close collaboration with CLASS developers and the CLASS was used as one lens for enhancing teachers' knowledge and skills related to classroom management and student engagement.

KOL Mentor and Coach Training

Initial training included a combination of training and informal feedback. Two intensive days of training in Fall 2009 with the lead and fourth author were designed to introduce mentors and coaches to the model and curriculum and to solicit their feedback regarding needs and priorities for teachers. Day 1 focused on the process and experience of facilitating group seminars and coaching; Day 2 focused on the evidence-based strategies designed to enhance early career teachers' effectiveness in classroom management and engaging learners. In January 2010, mentors participated in two additional days of training: the first focused on the process of facilitating PLC meetings and the second focused on using the CLASS as a professional development tool (Pianta et al., 2008). Mentors and coaches contributed significantly to the development of the curriculum, thereby enabling us to capitalize on their expertise and increase the relevance of services for teachers. Mentors were compensated $1000 and earned credit toward state recertification for training and earned stipends for facilitating group seminars and PLCs. The lead and fourth author also facilitated weekly supervision with coaches and monthly supervision with mentors. Supervision was highly structured, agenda-driven, and focused on reviewing teachers' progress in meeting professional development goals, problem-solving barriers to progress, and planning for next steps.

Initial Feedback and Modifications to Enhance Contextual Fit

Being responsive to and overcoming early barriers were crucial to the ongoing collaboration and iterative development of the curriculum. Initial feedback from our school partners through weekly meetings, reviewing the curriculum, and trainings with coaches and KOLs suggested several adaptations to enhance the contextual fit of the model. The first adaptation included broadening the role of the coach to support more teachers in the school who were not early career teachers by our definition but who nevertheless were strug-

gling with classroom management and engaging learners. Towards this effort, the principal created opportunities for the coach to attend grade level meetings as a mechanism for providing broader school support. Second, to enhance teacher motivation, we incorporated motivational interviewing strategies (Miller & Rollnick, 2002) into the curriculum and initiated professional development activities by inviting teachers to prioritize topics and select from a menu of strategies. The principal likewise suggested that we would enhance PLC participation by creating a "party-like" atmosphere, with raffles and door prizes. Third, collaboration with families was identified as a high priority for new teachers, and thus we added universal (Good News Notes; Rubenstein, Patrikakou, Weissberg, & Armstrong, 2000) and targeted (Daily Report Card; Kelley, 1990) family involvement strategies into the curriculum. Finally, feedback from the mentors and coach suggested that classroom management and student engagement was inextricably linked to content and instruction. Thus, we integrated lesson plans and state learning standards into coaching conferences and group seminars.

Method

Setting and Sample

School. One kindergarten through eighth (K-8) grade elementary school located on the west side of Chicago participated. University and district internal review board approval were obtained prior to initiating the study. The school was identified by screening K-8 grade schools within this urban district ($n = 325$) based on the following criteria: 85% or greater low income, average reading scores on statewide testing below the 30th percentile ($M = 28$, $SD = 3.8$), and school population within one standard deviation of the district mean ($M = 702$, $SD = 306$). The school was characterized as 98% African American and 99% free or reduced-price lunch status and was one of three schools who had partnered with our investigative team in a prior mental health services reform project in the compar-

ison condition (Atkins et al., 2008; Cappella et al., 2008).

Mentors. The identification and selection of mentors followed systematic procedures described in our prior work (Atkins, Frazier et al., 2008; Neal et al., 2008, 2011). First, staff in an instructional role (i.e., K-8 teachers, reading specialists, and paraprofessionals) participated in 10-min sociometric interviews in which they provided demographic information and nominated an unlimited number of colleagues with whom they consulted regarding (1) classroom management and (2) motivating learners. Teachers ($n = 22$ of 23 eligible staff) indicated how many times per month they consulted with and how emotionally close they felt to each nominated colleague (1 = *Not at All*; 5 = *Very Close*). Second, sociometric interview data were used to identify KOLs based on their peer-nominated ability to provide direct advice on classroom management and motivating students to the greatest number of K-8 grade teachers within their social network (Neal et al., 2008, 2011). Conducting sociometric interviews with all school personnel rather than just classroom teachers increases the likelihood of identifying individuals within the school community who make important contributions to instruction and was essential to accurately identifying KOLs in close contact with the majority of teachers and thus best positioned to encourage the spread of information about evidence-based practices (Atkins, Frazier et al., 2008a; Neal et al., 2008, 2011). After the top five teachers with the highest percentage of nominations in both classroom management and student motivation domains were identified, we ensured those teachers also met our demographic criteria (i.e., minimum 5 years teaching and 2 years working at the school). The top five peer-nominated colleagues reached an average of 31% of teachers within their social network (range = 19%–57%) when compared to non-nominated teachers, who reached an average of 6% of their colleagues (range = 0%–14%). The two most influential teachers identified via the aforementioned procedures voluntarily transferred

to other schools in June 2009; therefore, the third and fourth most influential teachers (both reaching 24% of teachers within the network) were successfully recruited as mentors. One mentor was the lead literacy specialist at the school–she was European American and had 27 years of teaching experience. The other mentor was an African American male with 7 years of experience as an eighth-grade science teacher. Both mentors had attained master's degrees.

Coaches. Coaches were selected from a cadre of retired teachers affiliated with a local college of education with experience working in urban schools, conducting classroom observations, and facilitating feedback conferences. The first coach was a European American male with 36 years of experience as a special educator and administrator with a master's degree in special education. He had been retired for 5 years, during which time he was mentoring undergraduate students completing their student teaching assignments. He delivered coaching from September through November 2009, but responsibilities outside of the project grew increasingly demanding and he resigned after 3 months of coaching. A postdoctoral fellow with extensive training in classroom management and consultation with urban teachers filled in as coach during the interim 2 months until we hired and trained a second coach. The second coach was an African American female with 37 years of experience as a classroom teacher, consultant, and principal with a master's degree in administration.

Early career teachers. The planned sample included early career teachers with 3 or fewer years of teaching experience based on evidence that teachers are most likely to leave teaching or transfer to other schools within the first 3 years of teaching (e.g., Guarino, Santibanez, & Daley, 2006). However, a significant number of early career teaching positions were eliminated district-wide during Year 1 of the study due to the economic recession; therefore, we extended eligibility criteria to five or fewer years. Six teachers were eligible to par-

ticipate, five consented, three had 3 or fewer years of experience (see Table 1 for demographic details).

Additional school personnel. At the request of the leadership team, all school personnel (e.g., general and special educators, paraprofessionals, security guards, reading specialists, guidance counselor) were invited to participate in monthly PLC meetings. Seventy-four percent (i.e., 17 of 23) of eligible school personnel consented to participate in the PLCs and contributed data, including 2 KOL mentors who cofacilitated the PLCs, 5 early career teachers (described earlier), and 10 school personnel (see Table 1).

Measures

Fidelity measures. Three fidelity measures were developed to examine adherence to the core components of the service model based on the Multisystemic therapy model of fidelity measurement (Schoenwald, Letourneau & Halliday-Boykins, 2005). Accordingly, service recipients (i.e., early career teachers, additional school personnel) reported on the activities of service providers (i.e., mentors and coaches) for each service component (i.e., group seminars, coaching, PLCs). After each group seminar, early career teachers completed a 16-item yes/no checklist indicating whether specific instructional methods were used (e.g., didactic instruction, modeling of a strategy, practice, performance feedback, and problem-solving implementation barriers) and whether each element was helpful. At the conclusion of each PLC, participants completed a 17-item yes/no checklist that similarly asked about the use of specific instructional methods in addition to helpfulness ratings. As described previously, coaching encompassed three types of service contacts (i.e., preconference, classroom visits, and postconference). Following each coaching contact, early career teachers completed a yes/no checklist (ranging from 15 to 20 items) indicating whether each coaching element (e.g., modeling, performance feedback, observation) was used and how helpful each element was. Coaches also completed weekly logs tracking frequency and

Table 1
Early Career Teacher and Additional School Personnel Demographic Characteristics

Early Career Teachers ($N = 5$)	
M Yrs. Teaching (SD)	3.4 (2.01) Range = 0–5 years
Grade/Role	Kindergarten ($n = 1$) 4th/5th Grade ($n = 1$) 7th/8th Grade ($n = 1$) Special Education (6–8th) ($n = 1$) Art ($n = 1$)
Highest Degree	Master's Degree through Alt. Cert. ($n = 3$) Bachelor's in Education ($n = 2$)
Gender	$N = 5$ Female
Race/Ethnicity	African American ($n = 3$) European American ($n = 1$) Asian American ($n = 1$)
Year 1 Data Contributed	Group Seminar Fidelity Coaching Fidelity PLC Fidelity Mid Year Focus Group

Additional School Personnel ($N = 10$)	
M Yrs. Teaching (SD)	15.9 (10.87) Range = 1–32 years
Grade/Role	Head Start ($n = 3$) 1st/2nd ($n = 1$) 3rd/4th ($n = 1$) Special Education ($n = 4$) Guidance Counselor ($n = 1$)
Highest Degree	40% Master's Degree 30% Bachelor's Degree 10% Associates Degree 20% HS Diploma or Equivalent
Gender	91% Female
Race/Ethnicity	73% African American 18% European American 9% Biracial
Year 1 Data Contributed	PLC Fidelity PLC Focus Group

Note. Data reflect demographic data reported at baseline.

length of coaching contacts and content covered.

Focus groups. Teacher satisfaction was also assessed with one midyear focus group with all early career teachers ($n = 5$) after 3 months of participating in coaching and group seminars. A second focus group was conducted at the end of the first year after 4 months of PLCs. The PLC focus group participants included two head start teachers, one guidance counselor, one para-educator, in addition to one kindergarten, 3rd-, 4th-, and 7th/8th-grade teacher ($n = 7$). Both focus groups were 60 min long, conducted at the school, and moderated by the first author. The moderator followed a focus group protocol that began with general questions ("Tell me about your experience with the model so far"), followed by an introduction to the topic ("Now, I would like to know more about your experience with group seminars/PLCs/coaching") and open-ended probes for each area of inquiry ("What parts of the group seminar have you found more and less helpful"). This format ensured teachers could answer in an unstructured manner and allowed the moderator to gain a deeper understanding of how teachers experienced each component (Morgan, 1997). Focus groups were audiotaped and transcribed verbatim by two experienced transcribers and the moderator checked the transcripts against the audiotapes for accuracy.

Analyses

Descriptive analyses examined the extent to which the core components of the model were delivered. Thematic analyses were conducted using guidelines outlined by Braun and Clarke (2006) with the aid of Atlas.ti, a qualitative analysis software program (Murh & Friese, 2004). Braun and Clarke's (2006) guidelines provided a flexible yet clearly delineated process for identifying and analyzing thematic patterns: (1) becoming familiar with the data, (2) generating initial codes, (3) identifying themes, (4) reviewing and revising themes, and (5) refining themes and subthemes. The constant comparative approach was used to ensure internal coherence

and consistency within each theme (Boeije, 2002). Thematic analyses were conducted across both focus groups, rather than separately to enhance the rigor of the analysis and because both groups were asked the same general questions regarding their experiences with the model. However, the principle of constant comparison was used to detect thematic similarities and differences in reported experiences across groups at each stage of the analysis (Boeije, 2002). The first and second author independently reviewed and coded each focus group transcript. Through an initial round of open coding, an initial list of descriptive codes was developed by consensus. Low inter-rater agreement on descriptive codes at this stage was addressed by meeting, clarifying, discussing, and re-establishing consensus on operational definitions followed by another round of independent coding. Kappa coefficients for the final list of 19 master codes ranged from 0.67 to 1.0 ($\kappa = .81$) indicating adequate inter-rater agreement (Thompson, McCaughan, Cullum, Dheldon, & Raynor, 2004). The identification and refinement of themes was reached by consensus using the constant comparative approach (Boeije, 2002).

Results

Implementation of the Model

Attendance records, fidelity tools, and coaching logs were used to examine the degree to which the three core components were delivered as designed. Completion rates for fidelity checklists were as follows: 92% for group seminars, 88% for PLCs, and 59% for coaching.

Group seminars and PLCs. Figure 3 highlights the percentage of early career teachers attending group seminars and PLCs. Ten of twelve planned group seminars were offered between the end of September 2009 and early May 2010, suggesting that the majority of seminars were delivered as planned. Attendance rates for group seminars varied across the school year, ranging from 40% to 100% ($M = 64\%$). Attendance rates for group seminars were strongest early in the school year,
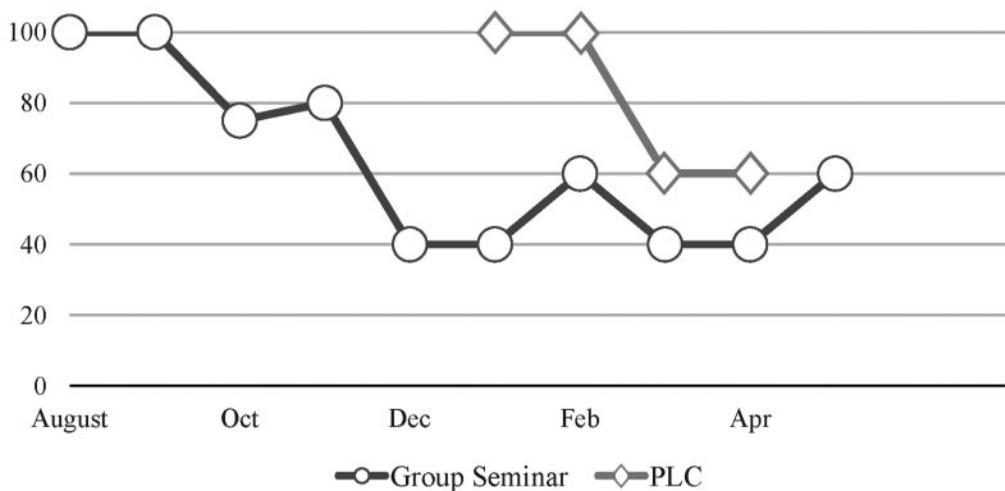
Figure 3. Percentage of early career teachers attending the ten group seminars and four PLCs during the 2009–2010 school year.

weakest midyear (coinciding with the initiation of PLCs), and leveled off to 60% by the end of the school year. More than 90% of group seminar checklists reflected that teaching methods such as didactic instruction, discussion, troubleshooting, and modeling were used versus 45% reflecting that active learning methods were used.

Four PLCs were offered between January and May 2010 suggesting the PLCs were delivered monthly as originally intended with both KOL mentors cofacilitating all PLCs. Attendance rates at the PLCs for the 5 early career teachers (see Figure 3) ranged from 60% to 100% ($M = 80\%$) and 40% to 70% ($M = 55\%$) for the ten additional school personnel consenting to the research. Three of the 23 original eligible teachers participated in at least 50% of the PLC meetings without consenting to the research. More than 90% of PLC checklists reflected that the key instructional methods were used by the KOL mentors when facilitating the PLCs (i.e., active learning, video, troubleshooting, didactic, discussions, and handouts).

Coaching. Early career teachers participated in coaching activities between September 2009 and May 2010. Coaching fidelity measures and logs were ready for use in December 2009; therefore, the following data represent a conservative estimate of service receipt (approximately 21 weeks excluding breaks and statewide testing). Coaching logs reflected that new teachers participated in an average of 960 min or 16 hrs of coaching ($SD = 2.45$ hr). On average, early career teachers spent 36% of their time in preconferences ($M = 20$ min; $SD = 20$; range = 1–105), 38% of their time in classroom visits ($M = 52$ min; $SD = 18$; range = 15–95), and 19% of their time in postconferences ($M = 14$ min.; $SD = 12$; range = 5–60). Coaching checklists revealed that coaches relied on discussion, observation, and didactic methods to a much greater degree than performance feedback, modeling, or practice. Coaching checklists also reflected that conferences covered behavioral management strategies (e.g., activity and classroom rules, preventing and responding to misbehavior) to a much greater degree than relationship building strategies with students or families. Coaching logs corroborated those data and indicated that only 8% of coaching-related activities fell in the "other" category, including early engagement and relationship

building, scheduling, and troubleshooting logistics.

Response to the Model

Teacher satisfaction was examined through a combination of fidelity checklists and focus group data. More than 90% of group seminar checklists reflected that early career teachers experienced didactic instruction, handouts, discussion, problem-solving, modeling, and performance feedback as more helpful relative to videos (58%), active learning (75%), and practice using a strategy (64%). Ninety percent or more of PLC checklists reflected that teachers experienced didactic instruction, handouts, and problem-solving as more helpful than videos (80%) and active learning (60%). More than 90% of the pre- and postconference checklists reflected that early career teachers experienced didactic methods, discussion, performance feedback, and reflective practice as helpful. In contrast, only three-quarters of the checklists reflected that modeling by the coach, coteaching a lesson with the coach, and coach observation was helpful. Focus groups elicited more comprehensive feedback regarding the content and format of group seminars, coaching, and PLCs. Through thematic analyses of focus group data, three broad themes (i.e., satisfaction with the model, professional isolation, and enhancing feasibility) provide insight into teachers' initial response to the model and how these experiences compared and contrasted with their current work context. These themes are described in greater detail below, with quotations highlighting key features of the exchange.

Satisfaction with the model. One theme that emerged across both focus groups was a positive reaction to the service model. Three subthemes emerged from the analysis of teachers' responses to the two components requiring teachers to meet in a group format—group seminars and PLCs. Those subthemes included treatment as professionals with expertise to share (rather than passive recipients of information), opportunities to share ideas with colleagues, and respectful and profes-

sional treatment of teachers' time. These three teacher perceptions of the model appear to be interdependent. That is, group seminars and PLCs created consistent, predictable opportunities to meet and provided a format that encouraged the exchange of ideas, experiences, and expertise vertically from mentors and horizontally from colleagues. Early career teachers and PLC participants described welcoming the opportunity for collegial interactions and benefiting from hearing their colleagues share general classroom experiences in addition to experiences with specific strategies. The following are two quotes illustrating how the PLCs were perceived:

> You guys had an agenda but…you let us talk and you let us discuss…. We bounced ideas off of each other and even if we didn't get through all of it, it was still to the point where what we found was something that we needed to focus on and that was not just a venting session but something that really helped…. And I think why those worked so well is because it was during the school day. You know, you ask somebody to come before school or after school it's so difficult.

> I don't really deal with classroom management on a regular basis but from an observation standpoint, I saw it as a nice time for teachers to reflect and, like you said, there are two pieces to it, just getting some concrete things they can use in the classroom, and I think part of it is . . . teachers here don't like sit down for lunch and like talk and share ideas.

Professional isolation. Satisfaction with the model appeared to be associated with teachers' experience of professional isolation in their current work context. Several subthemes describing professional isolation were identified: limited communication between teachers around practice, desire to communicate without the time to do so, lack of personal connections with colleagues, and insularity. Data from both focus groups converged in the description of insular classrooms and very limited opportunities for collegial exchange of information, experiences, and expertise. Despite significant overlap in reported experiences across the two focus groups, there were several differences in what each focus group emphasized when describing experiences of

isolation and insularity. The isolation described in the early career teacher focus group highlighted a lack of personal connection to colleagues and not feeling fully indoctrinated into school routines (e.g., school-wide behavior management system), whereas insularity in the context of the PLC focus group highlighted a lack of knowledge regarding what colleagues were doing in their classrooms and the type of instructional practices their colleagues used. Across both focus groups, teachers highlighted significant time constraints (e.g., 20-min lunches spent preparing for the next lesson) and infrequent and inconsistent opportunities to meet and talk with colleagues at the root of the isolation and insularity they experienced. The PLCs and group seminars were described as providing teachers with increased opportunities to share and collaborate with colleagues, thereby reducing their sense of isolation. The following quote describes an early career teacher's experience of isolation:

> No one knows what's going on between the different rooms and it's really frustrating, I think because I would love to tell people what we're doing in my room and I would love to be able to use some of that in other rooms and…. I think that's the part that's frustrating. We're so isolated from each other.

Another early career teacher shared that through the group seminars she was first exposed to the school-wide behavior management system using toothpicks that she now implements in her classroom:

> The part that I've gotten the most is just the fact that I know what you guys are doing in your classrooms. Like, I know your rules because of these seminars. Like, I know what [Teacher X] does in her room and I don't usually know that stuff because I'm sure you feel the same way. Like, I didn't know the toothpick thing until this part of the year and I feel really bad about that because…. I don't know why I didn't know it. So that kind of stuff is nice because now I use it in my own classroom and I feel like a little bit more involved.

Enhancing feasibility. Although components of the model (i.e., PLCs and group seminars) created new opportunities for teacher collaboration and in turn helped miti-

gate some of the isolation and alienation teachers experienced at their school, teachers participating in both focus groups identified the need to adapt the model and the strategies subsumed within the model to better reflect the realities of their work environment and their need for concrete support. Three interrelated thematic patterns related to teachers' needs emerged: *relevance* (i.e., the extent to which the strategies were perceived as applicable and appropriate to teachers' context), *instrumental support* (i.e., the need for tangible materials and concrete assistance around implementation of new strategies), and *perceptions of effectiveness* (i.e., beliefs regarding the extent to which the strategies introduced would be effective in reducing student behavior problems and enhancing motivation). Feasibility—teachers' beliefs regarding successful integration of the strategies into their instructional day and students' ability to benefit from those strategies—was conceptualized as the byproduct of a service model that was highly relevant to teachers' context, that included instrumental support around implementation, and that enhanced perceptions regarding effectiveness.

With regard to relevance, analyses revealed that teachers wanted access to training materials that reflected urban schools and the students they served and more discussion regarding how to adapt the strategies accordingly. Teachers, for example, described wanting access to videos with greater face validity, depicting overcrowded classrooms with heterogeneous learners and students with intense behavioral and academic needs.

> Teacher A: Yeah, I'm like, "Wow! I wish I had those kids!"[Laughter]
> Teacher B: You know, kids that sit there.
> Teacher A: Kids that sit there quietly and wait.

One early career teacher offered to videotape her classroom to augment the authenticity of the training materials. Both new and more experienced teachers also requested more time and consideration for how to modify specific strategies to accommodate the developmental and instructional level of individual students.

Instrumental support was operationalized as providing teachers with a training curriculum that included tangible and reproducible materials (e.g., tokens, tickets) and setting aside time during group seminars and PLCs to prepare strategy-related materials. Instrumental support also included specific instructions and guidelines from mentors around when to implement strategies (e.g., "I really just need you to definitely do it for the week"). Teachers explained that significant time constraints interfered with follow through and that the aforementioned instrumental support would enhance their implementation efforts. Finally, instrumental support also included teachers' need for concrete assistance around implementation. Early career teachers, on one hand, described the need for more concrete support from the coach, including feedback that was affirmative, constructive, and immediate, in addition to coaches taking a more active role during classroom visits. PLC participants, on the other hand, described concrete support they could provide to each other given their diverse skills and expertise. Media and technology (i.e., e-mail, blogging, creating a 'virtual school community') emerged as a method for providing instrumental assistance to those teachers requiring more or different support.

Finally, teachers' perception that a strategy would or could be effective appeared to be influenced by either personal success with a strategy or collegial endorsement. Below two teachers discuss the use of tootles, a classwide strategy designed to promote positive peer interactions and reduce tattling (Embry, Straatemeier, Richardson, Laugher, & Mitch, 2003).

> Teacher A: If somebody else you know has used it and you know those children and you know that it would work personally in your classroom.
> Teacher B: Right. . . Why were stuck on tootles because [early career teacher] did tootles and it was a lively, engaged conversation and she gave us that information . . . and I think because it was implemented in her classroom . . . It was very authentic when she did it.

Perceptions of effectiveness and willingness to experiment with a strategy was also related to the depth of coverage of each strat-egy. Specifically, teachers shared that despite appreciating choice around different strategies to use, they would have preferred more thorough coverage of fewer strategies—less breadth, more depth.

> And just narrowing it down, you know? Narrowing it down to make it where, like you said, it's just feasible in the classroom and you know that you can hit on at least one thing…. And whether you take away five strategies from the whole year or one strategy, at least…it was something that worked for you.

Discussion

The current study launches a program of research to support urban early career teachers by targeting common obstacles to teaching effectively and by building in protective factors to help novices thrive in a demanding work context. The Teachers Supporting Teachers in Urban Schools (TST) model marshals resources through an influential mentor and external coach with the goal of enhancing new teachers' effectiveness and connectedness to colleagues. The mixed method iterative development framework allowed us to preliminarily examine during Year 1 whether the model was delivered as intended and acceptable, and informed adaptations for subsequent funding years with the addition of two new schools. The overarching goal of the 3-year study is to create a service model (vs. a canned curriculum) that responds to the unique needs of each school context and can be adapted in terms of structure and content to more closely match existing school norms, goals, and priorities around instruction and behavior.

Adaptations

The incorporation of early feedback from our school partners allowed us to capitalize on the continuous flow and exchange of information between the research team, the leadership team, and the service providers (coaches and KOLs) early in the development process. A combination of implementation and teacher satisfaction data analyzed after our first funding year informed a number of adap-

tations that guided future iterations of the model, which are described below.

Less is more. Despite wanting to design a model that included a menu of options to enhance teacher motivation and engagement, in this time- and resource-limited environment, teachers wanted more information about fewer strategies and specific instructions regarding exactly when to implement them. Thus, during Year 2 of the study we integrated several seminar topics (e.g., rules, procedures, physical arrangement of the classroom, and positive communication with families) into the first few coaching sessions to provide new teachers with access to critical strategies early in the school year. We also streamlined the group seminar and PLC curriculum during Year 2 of the study to ensure mentors only introduced one strategy per session and allocated more time to review, model, and discuss adaptations. Rather than introducing new content during subsequent meetings, more time was allocated to discussing implementation barriers, troubleshooting next steps, and adapting the strategies to better fit teachers' idiographic needs. In addition, we used school announcements, reminder memos, and "themes of the week" (e.g., "Tootles Week") to remind teachers of the school-wide strategies being implemented.

It is unclear whether the decline in group seminar attendance midyear for early career teachers was a function of time demands, identifiable stress cycles for teachers, or perhaps the perception by new teachers that PLCs could supplant group seminars (Hembling & Gilliland, 1981). Interestingly, PLC attendance rates followed a similar trend, with strongest participation rates during initial PLCs, weakest during the middle sessions, and then rebounding during the final meeting. Although we speculate that PLC attendance rates were a function of scheduling, with poorest attendance on PLCs scheduled after school versus district-wide professional development days, significant time constraints raised by focus groups participants coupled with lower attendance rates for early career teachers when PLCs and group seminars were scheduled concurrently (see Figure 3) prompted our team to incorporate regular feedback sessions with early career teachers during subsequent funding years to ensure that professional development activities were not becoming burdensome.

Lower completion rates for coaching fidelity checklists (59%) completed by early career teachers after each coaching contact relative to PLC and group seminar checklists (88% and 92% completion rates, respectively) further suggested that completing fidelity measures after every coaching contact (i.e., preconference, classroom visit, and postconference) was too burdensome for early career teachers. Therefore, in an effort to create an efficient and effective suite of fidelity measures (see Schoenwald et al., 2011), during subsequent funding years we reduced administration of coaching fidelity from weekly to monthly whereby teachers were asked to consider their most recent preconference, classroom visit, and postconference, and added a rating of how representative each coaching session was relative to other sessions taking place that month. During Year 2 we also administered a parallel version of the coaching fidelity checklist to coaches in order to assess the extent to which we find convergence between early career teacher and coach ratings when the date of service is yoked. That is, if we learn that coaches can reliably and validly tell us what happened during coaching, we may only need coaches to complete this measure in a larger efficacy trial.

Multiple pathways to effectiveness and connectedness. The service model remains grounded in promoting early career teachers' *effectiveness* and *connectedness* to improve teacher retention and support student learning. Teacher satisfaction data, for example, highlighted that the group format (i.e., group seminars and PLCs) mitigated some of the isolation that teachers, particularly newer teachers, experienced in their school. It is important to note that some early career teachers had up to 4 years of teaching experience at their school and still experienced their work as insular, which suggests that altering the social

context of a school takes time. Focus group data suggested that PLCs and seminars helped novices become more socially integrated into the school milieu and informed about existing school-wide practices. These findings support what is known about the critical role that social connections, peer collaboration, and a supportive school community plays in helping teachers cope with stressors, manage teaching demands, and grow professionally (Bryk & Schneider, 2002; Shernoff et al., 2011). In subsequent funding years, we also incorporated media and the Internet (e.g., blogs, chat rooms, e-mail) to create a more flexible infrastructure to support teacher collaboration.

Findings also highlighted that teachers' perceived effectiveness in experimenting with innovative practices appeared to be related in part to the level and type of instrumental support provided. This is consistent with social learning theory, which guided our conceptual model and highlights that learning and behavior are grounded in a social context and that learning occurs vicariously by observing others (Bandura, 1997). Coaching fidelity data and focus group data, however, revealed that early career teachers spent a limited amount of time in postconferences and needed more modeling, demonstration, and timely feedback from the coach, particularly following classroom visits.

Based on these early findings, several adaptations to the coaching model were made immediately following the midyear focus group with early career teachers, which coincided with hiring a new coach. These modifications included written feedback from the coach after classroom visits when postconferences were not possible to enhance communication with and feedback to early career teachers. In addition, with permission from our internal review board, we encouraged coaches and early career teachers to use technology (e.g., e-mail, phone calls) to enhance communication and to create greater fluidity around modes for planning and feedback. Because early career teachers also reported needing more active modeling and demonstration of strategies during classroom visits and more constructive feedback during postconferences,

we incorporated more field-based training and cocoaching with the newly hired coach, with university consultants playing a more active role. This was done in an effort to maximize the coaches' understanding of, comfort with, and fidelity to an active coaching model. Coaching logs revealed that the mean number of minutes spent in postconferences increased from 12.5 to 17 after implementing changes to the coaching model, suggesting that, at a minimum, early career teachers and coaches were having more opportunities to communicate with one another and plan together after coaching modifications were made. Fidelity checklists, however, did not reveal changes in the degree to which early career teachers perceived modeling, coteaching, or coach observations to be more helpful after modifying the coaching component. Taken together, these findings suggested during subsequent funding years the need to create more systematic opportunities for the coach, the research team, and the early career teachers to strategize together around how to enhance the coaching component and more frequent opportunities for informal feedback sessions and check-ins throughout the year.

We also learned that teachers' perceptions of effectiveness and feasibility were related to their colleagues' (not just KOLs) experience of success. Hence, during the second year of the intervention we increased opportunities for early career teachers to share their implementation successes given their early exposure to strategies through coaching. This is particularly critical in light of not recruiting the most influential mentors during Year 1; thus, part of creating a responsive, contextually aligned service model included drawing on additional indigenous resources (e.g., disciplinarians) to support implementation and sustainability of the model. Indeed, diffusion of innovations literature highlights that KOLs are often influential early on to encourage uptake, but that collegial relations may be more important for maintenance—this is the way in which the tipping point is operationalized—the point at which an innovation is adopted by the social network (Rogers, 2005). Thematic analyses also revealed that percep-

tions of effectiveness could be enhanced through tangible, relevant, and differentiated training materials. Thus, during the following year we embedded "Make it Take It" activities into group seminars and PLC meetings and allotted more time for teachers to prepare all strategy-related materials (e.g., Good Behavior Game rules created on poster board, tootles cards developed). We also integrated additional visual media into the curriculum that more closely reflected the reality of teachers' classrooms, including using commercial video clips.

Limitations

Although it is unclear whether our experience in one school generalizes to the broader population of urban schools given the small and restricted sample of early career teachers, Year 1 data provide a window into the feasibility of the service model from the perspective of our community partners and service recipients, which is an important first step in development (Hoagwood et al. 2002). Given limitations related to the small sample size, several steps were taken to conduct a rigorous and transparent qualitative inquiry: inter-rater reliability for the descriptive master codes was obtained, a systematic process for identifying thematic patterns was used (Braun & Clarke, 2006), and a step-by-step constant comparative approach was used to identify themes (Boeije, 2002). Although focus groups were a logical methodology for the current study given they facilitate the collection and analysis of extensive data in a brief period of time, several limitations to this methodology warrant mention. First, because of the inherent collective nature of focus groups, they often limit the breadth and depth of information obtained from each participant when compared to individual interviews. Second, focus groups are contrived social settings created by the researcher among individuals with a presumed shared set of experiences in common (Kidd & Parshall, 2000; Morgan, 1997). Hence, data can be influenced by group dynamics, including domineering group members, varying comfort in revealing personal information in a group format, and individual pressure to conform and/or censor opinions (Kidd & Parshall, 2000). The group moderator addressed these potential problematic group dynamics by encouraging different group members, in particular more silent members, to share their perspectives and experiences.

Implications for Science and Practice

Given the urgent, intensive needs facing teachers working in inner-city, high-poverty schools, this program of research sheds initial light on how to help new teachers overcome some of the barriers to teaching effectively, remaining in the profession, and promoting positive outcomes for at-risk learners. Because mentoring and induction programs to date have scant evidence of a direct connection with student achievement, our service model has the capacity to further knowledge by focusing explicitly on improving new teachers' practices around observable characteristics of teaching related to positive outcomes for learners.

This work reflects recent calls to develop contextually relevant interventions and service models that better reflect the exigencies of real-world practice settings (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001; Hoagwood et al., 2002). Based on what we have learned thus far regarding implementation and satisfaction, we had an opportunity to make key adaptations to the model to meet the specific needs identified by this small sample of urban teachers. During subsequent funding years, we will assess the extent to which the model is producing promising teacher outcomes related to perceived and objective effectiveness and connectedness. Although small scale, this study does illustrate the extent and nature of support required for early career teachers in addition to how and under what conditions they are likely to perceive a service model and specific strategies as feasible and effective.

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