

Expanding the Role of School Psychologists to Support Early Career Teachers: A Mixed-Method Study

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Abstract. School psychologists have training and expertise in consultation and evidence-based interventions that position them well to support early career teachers (ECTs). The current study involved iterative development and pilot

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testing of an intervention to help ECTs become more effective in classroom management and engaging learners, as well as more connected to colleagues. The intervention included group seminars, professional learning communities, and coaching. The sample included 15 ECTs and 57 school personnel in three high-poverty, urban schools. Feasibility and initial promise of the intervention were examined using a mixed-method design, which yielded promising trends in ECTs' effectiveness and connectedness. ECTs described facilitators to effectiveness and connectedness associated with the intervention and barriers associated with the structural realities of schools and gaps in their training. ECTs described effectiveness as neither static nor global and perceived meaningful progress, leveraging individual relationships and group formats to receive instrumental and emotional support.

As the discipline of school psychology transitions from a traditional role of assessment and eligibility determination to an expanded role of promoting positive academic outcomes for all learners (Burns, 2013; Yseldyke et al., 2006), school psychologists can make an invaluable contribution to supporting early career teachers' (ECTs') professional development. School psychologists, by virtue of their training and expertise in teacher consultation, group dynamics, and evidence-based academic and behavioral interventions, are uniquely positioned within schools to help beginning teachers implement evidence-based practices and cultivate strong connections with their colleagues (Kratochwill, 2007). Thus, an expanded role for school psychologists can be to support novice teachers' professional development in an effort to enhance the functioning of all learners rather than limiting services to referred students (Kratochwill, 2007; Strein, Hoagwood, & Cohn, 2003).

One of the key ways in which school psychologists can support early career teachers (ECTs; i.e., teachers with fewer than five years of experience) is by helping them effectively prevent and manage classroom behavior concerns through the implementation of evidence-based practices (Kratochwill et al., 2007; Shernoff et al., 2011, Shernoff, Lakind, Frazier, & Jakobsons, 2015). This is particularly critical given that (a) ECTs consistently rank student misbehavior as the most stressful, complex, and pressing issue they face (Evertson & Weinstein, 2006; Ingersoll & Smith, 2003) and (b) student disruptive behaviors

contribute to high teacher turnover (Ingersoll, 2001; Smith & Ingersoll, 2004). For ECTs working in communities of urban poverty, this concern may be intensified given that rates of disruptive behaviors are 3 times national averages while access to effective mental health services is significantly compromised (Rudolph, Stuart, Glass, & Merikangas, 2014; Singh & Ghandour, 2012). In fact, in urban schools ECTs tend to leave the profession or migrate to other schools within their first 3 to 5 years (Guarino, Santibañez, & Daley, 2006). School psychologists' expertise and training in consultation and evidence-based practices position them well to support ECTs in the domains of teaching that are most challenging for them.

There is a considerable amount of literature identifying the critical role that school psychologists can play in supporting teachers' use of evidence-based practices through consultation and Response to Intervention (RtI) frameworks (Burns, 2013; Kratochwill, 2007). School psychologists also report favorable attitudes toward roles that would extend their responsibilities beyond assessment and referrals to leverage their broader skills (Hosp & Reschly, 2002). Thus, a shift in the role for school psychologists could leverage their unique qualifications to support ECTs who experience significant classroom challenges and isolation within the school. The current study addresses these issues by developing and testing an intervention for ECTs working in high-poverty, urban schools that can be directly supported and overseen by a school psychologist.

THE NEEDS OF ECTS

Teacher turnover is a troubling trend, with approximately 29% of new teachers nationally leaving the profession within their first 5 years (Ingersoll & Smith, 2003; Keigher, 2010; Smith & Ingersoll, 2004). Studies document that early struggles with student behavior and motivating learners are a top driver of attrition (Begeny & Martens, 2006; Burns & Ysseldyke, 2009; Ingersoll & Smith, 2003). ECTs also report the common experience of isolation, with few opportunities for meaningful collaboration with colleagues (Bryk & Schneider, 2002). We propose that effectiveness managing classrooms and engaging learners is necessary but insufficient to promote longer term commitment to teaching without experiencing connectedness (i.e., positive collegial relationships and opportunities for collaboration).

THEORETICAL COMPONENTS OF THE INTERVENTION MODEL

Informed by social cognitive theory, which emphasizes the development of knowledge, skills, and beliefs by observing and interacting with others who serve as models (Bandura, 1997), we developed an intervention to enhance ECTs' effectiveness in classroom management and engaging learners and connectedness with colleagues. This is based on evidence of the critical linkage between teacher effectiveness and student behavior (Aloe, Amo, & Shanahan, 2014), school engagement (Stipek, 1996), and teacher retention (Burley, Hall, Villeme, & Brockmeier, 1991). In addition, key social relationships were promoted to encourage a sense of belongingness needed to commit to teaching in extremely challenging settings.

The intervention was composed of three interconnected components (detailed in the Method section). Group seminars were designed to disseminate evidence-based classroom management and student engagement strategies to small groups of ECTs and to link them with one another to enhance connectedness. Professional learning communities (PLCs) provided ongoing professional learn-

ing and collaboration to improve instruction and student learning (National Association of School Psychologists [NASP], 2013). PLCs were available to all school personnel to cultivate ECT social networks and promote shared norms in classroom management and engaging learners. Coaching allowed for modeling and co-teaching specific evidence-based strategies introduced during group seminars and PLCs (Joyce & Showers, 2002).

STUDY DESIGN AND AIMS

This study was designed to develop and iteratively refine a multicomponent intervention in close partnership with a planned sample of three high-poverty, urban elementary schools. The study was supported by an Institute of Education Sciences Development and Innovation Grant (<https://ies.ed.gov/ncer/projects/grant.asp?ProgID=21&grantid=734&InvID=575>) to establish feasibility and initial promise in advance of expensive randomized controlled trials (Cappella, Reinke, & Hoagwood, 2011).

We used a convergent, parallel, mixed-method design, which includes qualitative and quantitative data collected concurrently, analyzed separately, and integrated to interpret findings (Creswell & Plano Clark, 2011). This design allowed for the collection of different yet complementary data to provide a more thorough and complete understanding of program outcomes than qualitative or quantitative methods alone would provide (Creswell & Plano Clark, 2011; Tashakkori & Teddlie, 2008). Quantitative data examined numeric trends in the delivery of the intervention and changes in ECT effectiveness and connectedness, while qualitative data validated findings across methods (Morgan, 1998). Qualitative methods also explored facilitators and barriers to developing effectiveness and connectedness, as well as intervention components theorized to be useful in supporting ECTs (Creswell & Plano Clark, 2011; Nastasi et al., 2007). With these goals in mind, we addressed the following questions: (a) Was the intervention delivered as designed? (b) Were there trends evident in ECT effectiveness and con-

nectedness that supported the feasibility and initial promise of the model? (c) What were the facilitators and barriers to developing effectiveness and connectedness?

METHOD

The study was conducted in three prekindergarten (pre-K) through eighth-grade elementary schools located in a large Midwestern city. University and district institutional review board approval was obtained prior to beginning the study. Participating schools were selected from a list of 75 schools that met the following eligibility criteria: 85% or more low-income students, average reading scores below the 30th percentile ($M = 28$, $SD = 3.8$), and school population within one standard deviation of the district mean ($M = 702$, $SD = 306$; Shernoff et al., 2011). In participating schools, 94% of students were African American, 97% of students received free or reduced-price lunch, and teacher mobility was 25% yearly (district means = 47% African American, 87% free or reduced-price lunch, and 19% teacher mobility yearly). Regular meetings with stakeholders at each school, including principals ($n = 3$), assistant principals ($n = 3$), school psychologists ($n = 2$), school counselors ($n = 2$), and a lead literacy teacher ($n = 1$) allowed for feedback on intervention components and provided opportunities for school partners to influence the role of key service providers. In addition, the first and third authors are trained school psychologists with expertise in school service delivery models and evidence-based practices to support classroom management and effective instruction, and both played a key role in the development and refinement of the intervention model.

ECTs

ECTs with 5 or fewer years of experience were eligible to participate in group seminars, PLCs, and coaching. Recruitment included informal meetings to share information and invite discussion followed by informed consent. Eighty-eight percent of eligible ECTs (15 of 17) consented. One teacher declined because of time commitments outside the project, and one declined because of planned medical leave. ECTs were approximately equally

represented in younger grades (pre-K to third, $n = 5$), older grades (fourth to eighth, $n = 4$), special education ($n = 2$), and art or physical education ($n = 4$). ECTs were predominantly women ($n = 13$), with 2.4 mean years of experience ($SD = 1.73$, range = 0–5). Seven had master's degrees through alternative certification programs. The remaining eight had traditional preservice training. Seven were African American, seven were European American, and one identified as "other." Ninety-three percent (14 of 15 ECTs) remained at their schools during the 2-year intervention.

Other School Personnel

PLCs were designed to create shared norms regarding classroom management and engaging learners; thus, ECTs and more seasoned educators were invited to participate. Eighty-eight percent of eligible school personnel (57 of 65) consented to participate in PLCs in addition to the 15 ECTs. Eight declined because of time constraints. Eighty-nine percent of school personnel were women, with 16.1 mean years of experience ($SD = 9.8$). Sixty-three percent were African American, 29% were European American, 5% were Latino, and 3% self-identified as other races.

Key Opinion Leader Mentors

Key opinion leaders (KOLs) were identified to lead PLCs and group seminars through sociometric interviews following procedures used by the investigators in previous studies (Atkins et al., 2015). KOLs are influential within their social network and well positioned to disseminate innovative practices (Atkins et al., 2008; Rogers, 2003). Ninety-four percent of eligible instructional staff (112 of 119) participated in 10-min sociometric interviews at baseline, during which they nominated colleagues from whom they sought advice regarding classroom management and engaging learners and they indicated the number of times they sought advice from each colleague per month. Teachers receiving the most nominations were invited to serve as KOLs provided they had at least 5 years of teaching experience and 2 years at their school. Selected KOLs ($N = 7$) were mostly

women ($n = 6$) and had 19.4 years of experience ($SD = 12.84$). All had master's degrees; six were African American, and one was European American.

Coaches

Five coaches were recruited through the College of Education at the investigators' institution. Coaches were retired educators with significant experience in teaching and administration in high-poverty schools ($M = 31.8$ years, $SD = 13$, range = 9 to 40). Three were women; three were European American, and two were African American; and all had master's degrees. Two coaches resigned after one semester because of outside commitments. Their responsibilities were distributed to the remaining coaches except for one late-entering ECT who was coached by a graduate student with 3 years of experience working with urban teachers.

Intervention Model

Group seminars were scheduled after school and led by KOL mentors to introduce the evidence-based classroom management and engagement practices and to decrease isolation. The curriculum was used in a prior study with urban kindergarten to fifth-grade teachers and expanded for pre-K to eighth-grade teachers (Evertson & Weinstein, 2006; Good & Brophy, 2003). Monthly, 1-hr PLCs were available to all school personnel to nurture ECT social networks and to promote shared norms around managing behavior and engaging learners (NASP, 2013). The Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2008), a well-established measure of classroom practices associated with social development and learning, informed the PLC and seminar curriculum. The CLASS has been used extensively as a professional development tool and the key constructs (see description of measures) mapped onto the predictors of turnover that were the focus of this intervention (Pianta, La Paro, et al., 2008). Coaching provided modeling and co-teaching during weekly classroom visits, supplemented with preconferences and

postconferences for planning and reflection (Joyce & Showers, 2002).

Training and Supervision of KOL Mentors and Coaches

The lead and sixth authors led a 2-day training for KOL mentors and coaches focused on evidence-based practices and the process of facilitating group seminars and PLCs. Coaches participated in two supplementary training days specific to the coaching model. KOLs participated in an additional 2-day PLC-CLASS training designed by CLASS developers and delivered by the first author (certified CLASS trainer). Coaches participated in weekly 1-hr supervision sessions and KOLs participated in monthly 1-hr supervision sessions with the lead author.

Quantitative Measures

Several quantitative measures were utilized. These measures assessed delivery of intervention components, ECT effectiveness, and ECT connectedness.

Delivery of Intervention Components

The extent to which intervention components were delivered as planned was informed by the multisystemic therapy model of implementation measurement (Schoenwald, Letourneau, & Halliday-Boykins, 2005) and assessed as follows: (a) percentage of group seminar and PLC sessions attended; (b) frequency and duration of coaching sessions; and (c) percentage of seminars, PLCs, and coaching sessions in which specific instructional components were delivered. Project staff tracked attendance at group seminars and PLCs. Frequency and duration of coaching and the evidence-based practices covered during each ECT contact were assessed through online logs completed by coaches at the end of each coaching day (98% of online coaching logs, 347 of 353, were completed). Percentage of instructional components delivered in group seminars was assessed through a 21-item yes-no checklist completed immediately following each seminar, assessing delivery of didactic instruction (e.g., introduced learning ob-

jectives), discussion (e.g., ECTs shared examples), and active learning (e.g., role-playing). The completion rate was 99% (80 of 81 checklists completed). School personnel and ECTs also completed a 19-item yes–no checklist immediately following each PLC to assess instructional components (i.e., didactic, discussion, active learning), with the completion rate reaching 99% (386 of 387). In addition, ECTs completed a monthly 16-item yes–no checklist assessing coach adherence to instructional components of active learning and observation. The completion rate reached 83% (424 of 509).

Measures of Effectiveness

Direct observations of quality of instruction and teacher rating scales assessed numeric changes in ECT effectiveness in classroom management and engaging learners. The CLASS (Pianta, La Paro, et al., 2008) is a reliable, standardized, direct observation of pre-K to fifth-grade classrooms. CLASS observations were conducted twice per year (four total) during 2-hr time blocks. The CLASS requires four observation cycles (20 min each) followed by 10 min of scoring nine dimensions (rated from 1 = *low quality* to 7 = *high quality*). Observers received 2 days of training and achieved 80% reliability with annual reliability checks with master-coded DVDs. The Classroom Organization domain (i.e., behavior management, maximizing engagement through routines and high-quality instruction; $\alpha = .77$) was used in the current study. The correlation between math gains in the prior year and the Classroom Organization domain score ($r = .348$) suggests adequate predictive validity.

The Teacher Sense of Efficacy Scale (TSES; Tschannen-Moran & Hoy, 2001) includes 24 items assessing perceived control of student engagement, learning, and behavior. ECTs completed the TSES twice per year (four total) using a 9-point scale (1 = *nothing* to 9 = *a great deal*). The TSES total score ($\alpha = .90$) was computed as the mean of the three subscales (Engagement, $\alpha = .87$; Instructional Strategies, $\alpha = .91$; Classroom Management, $\alpha = .90$). Construct validity has been established by examining correlations between the TSES and other measures of teacher self-efficacy, includ-

ing the Teacher Efficacy Scale (Gibson & Dembo, 1984) with $r = .64$ for the personal teaching efficacy factor.

Measures of Connectedness

Sociometric interviews and teacher rating scales assessed numeric changes in teacher connectedness, including collegial relationships and opportunities for collaboration. Sociometric interviews at baseline identified KOLs. Follow-up interviews (three at the first school and two at the remaining schools) assessed whether ECTs reported increasing connections to colleagues. These interviews yield quantitative data including the number of colleagues seeking advice from an ECT and the number of colleagues from whom an ECT seeks advice, consistent with standard practices for collecting whole network data (Marsden, 2011).

The Professional Community Index (PCI; Bryk, Camburn, & Louis, 1999) includes 29 items measuring six elements of professional community on a 6-point scale (1 = *never* to 6 = *10 or more times*) or 4-point scale (1 = *strongly disagree* to 4 = *strongly agree*). ECTs, KOLs, and school personnel completed the PCI twice per year (four total). The reliability and validity of the PCI were confirmed through Rasch modeling. Item difficulties were estimated, the fit of item data to measurement models was assessed, acceptable person separation reliabilities were established (ranging from .60 to .90), and infit mean squares for individual items ranged from 0.71 to 1.55. High PCI scores have predicted substantial improvements in reading achievement (Sebring, Allensworth, Bryk, Easton, & Luppescu, 2006). A principal components factor analysis indicated the six elements of professional community loaded onto one factor ($\alpha = .78$) suggesting professional community is a single construct (Bryk et al., 1999). The PCI sum score was used in this study ($\alpha = .93$ for this sample).

Qualitative Measures

Qualitative measures comprised measures of effectiveness and connectedness. These were obtained through semistructured interviews.

Semistructured interview guides were informed by the literature on ECT turnover

and assessed ECT perceptions of (a) effectiveness with classroom management and engaging learners and (b) connectedness to colleagues and relationships among school personnel (Ingersoll & Smith, 2003; Johnson & The Project on the Next Generation of Teachers, 2004). Three semistructured interviews (baseline, end of Year 1, end of Year 2) were planned, with a total of 43 interviews conducted by the first author. Two ECTs participated in only two interviews—one because of entering the study late and one because of leaving the school before the conclusion of the study. Mean interview length was 59.71 min ($SD = 11.8$). Interviews were conducted at the schools before or after school and were digitally recorded, professionally transcribed verbatim, and compared with audio recordings to enhance accuracy.

Data Analysis

Reliable change index (RCI) scores are a conventional method for analyzing individual and small group data: $RCI = (X_1 - X_2)/sdiff$, where X_1 represents the pretest score, X_2 represents the posttest score, and $sdiff$ is the standard error of difference between the two scores (Jacobson & Truax, 1991). RCI scores ≥ 1.96 indicate a positive change and RCI scores ≤ -1.96 indicate deterioration (Jacobson & Truax, 1991). Cohen's $d [(X_1 - X_2)/\text{pooled SD}]$ estimated the magnitude of change in effectiveness and connectedness (Cohen, 1988). Social network analyses using UCINET version 6 (Borgatti, 2002) evaluated numeric changes in ECT connectedness. Individual centrality included the proportion of individual connections divided by the maximum number of connections (Freeman, 1978). Because ECTs can have ties inward or outward, two measures of centrality were calculated: (a) *in-degree*, defined as the number of colleagues who sought advice from an ECT, and (b) *out-degree*, defined as the number of colleagues from whom an ECT sought advice.

Two-level longitudinal mixed-effects regression models (Hedeker & Gibbons, 2006) with random intercepts were performed using PROC MIXED in SAS 9.2. Observations were

nested within teachers; thus, observations measured longitudinally were at the first level, and teachers were at the second level. Proposed models addressed within-participant correlations resulting from repeated observations collected over time from the same participant. Thus, these models accounted for clustering of observations within teachers and examined connectedness over time. These analyses permitted use of all available data (i.e., without imputing missing values) from school personnel ($n = 57$) participating in two or more time points. The model included intercept (i.e., average score at baseline) and slope (i.e., systematic change of a score over time) parameters. Our primary interest was in the slope parameter to examine the performance of teachers over time. Summed scale scores for the PCI (Bryk et al., 1999) were used in all analyses.

Semistructured interviews were used to (a) validate findings across methods, (b) explain facilitators and barriers to developing effectiveness and connectedness, and (c) explore intervention components theorized to be useful in supporting ECTs (Creswell & Plano Clark, 2011). Interviews were analyzed with the mixed-method software Dedoose (Lieber, 2009). Thematic analyses relied on structured guidelines outlined by Braun and Clarke (2006) with multiple levels of cross-checking and validation embedded at micro and macro levels described later. These triangulation procedures provided corroborating evidence from direct observations, teacher rating scales, and teacher interviews to enhance the validity and credibility of our findings (Creswell & Plano Clark, 2011). The coding team included one female school psychologist and professor with doctoral training (first author), one female postdoctoral fellow, one male psychiatry resident, and one female doctoral student. First, transcribed interviews were prepared for analyses and divided into meaningful segments, each one considered a complete, coherent thought that could be understood in isolation (Saldaña, 2009). Second, a start list of subcodes was developed by consensus through a preliminary round of open coding (Miles & Huberman, 1994). Third, the lead author de-

veloped a structured codebook, including definitions of subcodes, inclusion and exclusion criteria, and example text to enhance inter-coder agreement (Fonteyn, Vettese, Lancaster, & Baur-Wu, 2008). Fourth, the lead author trained coders until they reached agreement on 90% of subcodes. Fifth, coders independently reviewed ECT interviews, assigned subcodes, and reviewed assigned subcodes. Low interrater agreement was addressed by reviewing and reestablishing consensus followed by independent coding and reaching agreement on 90% of the subcodes. Sixth, the constant comparative approach (Boeije, 2002) was used to detect thematic similarities and differences in reported experiences of ECTs. Pairs of coders independently examined all ECT excerpts assigned to subthemes and determined whether there were adequate data to support each subtheme. Coders then established consensus regarding internal coherence and consistency within those subthemes (Boeije, 2002). The final step in our analyses included the third author independently reviewing narrative descriptions to cross-check themes and subthemes and to enhance the credibility of the findings (Tashakkori & Teddlie, 2008).

The integration of both strands involved comparing and contrasting quantitative and qualitative measures to inform meta-inferences on the development of ECT effectiveness and connectedness. Quantitative measures of change over time in ECT effectiveness (CLASS and TSES) and connectedness (PCI) were compared with teacher reports via semistructured interviews. Specifically, qualitative data were transformed into numeric data to examine trends over time in the number of excerpts coded as positive, mixed, or negative. Rigorous analyses of each strand and the inferences made from each were then integrated to formulate meta-inferences that provided insight into our understanding of ECTs' experiences.

RESULTS

Results focus on whether the intervention was delivered as designed and trends in ECT effectiveness and connectedness. Facili-

tators and barriers to developing effectiveness and connectedness are also discussed.

Intervention Delivery

Average attendance at group seminars was 70%, with adherence scores higher for didactic instruction and discussion (89%) than active learning (60%). Average attendance at PLCs was 80%, with adherence scores higher for didactic instruction (75%) and discussion (62%) than active learning (39%). Coaching was designed to occur weekly in Year 1 and monthly by the end of Year 2, with dosage data generally conforming with this plan. ECTs met with coaches 1.3 times per week ($SD = 0.5$) for 1.5 hr in Year 1 and 0.7 times per week ($SD = 0.4$) for 1.2 hr in Year 2. During Year 1, preconferences were 16.4 min ($SD = 5.66$), classroom visits were 53.2 min ($SD = 20.49$), and postconferences were 14.7 min ($SD = 10.71$). During Year 2, preconferences were 20.8 min ($SD = 7.44$), classroom visits were 42.6 min ($SD = 20.44$), and postconferences were 11.9 min ($SD = 11.25$). Adherence scores were higher for observation (70%) than active learning (39%).

Trends and Themes Related to ECT Effectiveness

Quantitative measures examined trends in ECT observed (CLASS; Pianta, La Paro, et al., 2008) and perceived (TSES; Tschannen-Moran & Hoy, 2001) effectiveness in classroom management and engaging learners. On the Classroom Organization domain of the CLASS, close to a 1-point increase was observed over the 2-year study ($d = 0.5$; see Table 1). RCI analyses indicated that the majority of ECTs showed meaningful improvement in Classroom Organization. Perceived changes in ECT effectiveness measured by the TSES showed modest but positive gains over time ($M_{T1} = 6.7$, $SD = 1.1$ [some influence over student behavior and engagement] versus $M_{T4} = 7.0$, $SD = 0.9$ [quite a lot of influence]; $d = 0.2$). RCI scores revealed 40% of ECTs improved on the TSES, 46% evidenced no change, and 13% declined.

Table 1. Convergence of Quantitative and Qualitative Measures of ECT Effectiveness and Connectedness

	Quantitative Measures				Qualitative Measures				
	Time 1	Time 2	Time 3	Time 4	RCI Score	Subcode	Time 1	Time 2	Time 3
	ECT Interview								
Classroom Organization domain score	4.2 (1.0)	4.4 (1.2)	4.6 (1.2)	5.0 (1.4)	≥ 1.96 in 64%	Perceived effectiveness			
					No change in 14%	Positive	76	95	104
					≤ -1.96 in 21%	Mixed	39	43	19
						Weak	45	33	20
PCI total score	82.4 (16.3)	83 (17)	83.3 (15.4)	90 (12.2)	≥ 1.96 in 53%	Perceived connectedness			
					No change in 26%	Strong	21	52	64
					≤ -1.96 in 20%	Moderate	32	29	17
						Weak	51	40	29

Note. The Classroom Organization (CLASS) domain score was rated on a 7-point scale (1-2 = *low quality* to 6-7 = *high quality*). PCI was rated on a 4- or 6-point scale with total score used. $RCI = X_1 - X_2/sdiff$, where X_1 represents the pretest score, X_2 represents the posttest score, and $sdiff$ is the standard error of difference between the two scores. RCIs were not computed for one ECT because of missing baseline CLASS scores resulting from late enrollment. Qualitative counts were generated by summing the number of excerpts across all ECT interviews within a given time point that had been coded with that subcode. CL-ASS = Classroom Assessment Scoring System; ECT = early career teacher; PCI = Professional Community Index; RCI = reliable change index.

Table 1 presents convergence of quantitative (CLASS) and qualitative (interviews) measures of teacher effectiveness. Direct observations of quality of instruction (observed effectiveness via CLASS) corresponded well to teacher reports of improvements (perceived effectiveness via interviews) over time. Interview subcodes at each time point were created to reflect (a) positive efficacy (excerpt reflected positive beliefs regarding current or future ability to manage classrooms or engage learners; “I know how to focus on things that they [students] need a little more help in, because all the kids can do it. It’s just getting it down to their level, making it easy for them to see it and then move it along, so that everybody feels successful, because you get those behaviors when the kids feel like they can’t do it.”); (b) negative efficacy (excerpt reflected negative beliefs regarding current or future ability to manage classrooms or engage learners; “We can’t have recess so I feel like I don’t have any consequences, I don’t know what to do to punish them. Calling parents doesn’t always work, so I don’t know what to do I just, I get frustrated.”); and (c) mixed efficacy beliefs (excerpt reflected a mixture of positive and negative beliefs; “I feel like I do an okay job motivating most kids, but for those really difficult kids that don’t have the support at home. They don’t see any reason to be motivated. I don’t have success motivating those kids.”). Subcode counts were generated by summing the number of excerpts in each category (positive, negative, or mixed efficacy) across all ECT interviews at Time 1, Time 2, and Time 3. Table 1 shows that the number of positive efficacy subcodes increased over time while the numbers of mixed and negative efficacy subcodes decreased over time.

Facilitators to ECT Effectiveness

Thematic analyses explored the facilitators and barriers to ECT effectiveness in classroom management and engaging learners and examined the nature of intervention components theorized to support ECTs. The following sections present themes, subthemes, and direct quotes from ECT inter-

views. Frequency counts reflect the number of times different teachers conveyed a comment reflecting a subtheme in any of the three interviews.

On-the-Job Experience

On-the-job experience was the first theme that emerged, operationalized as first-hand experience in ECTs’ own classrooms with actual students that countered feelings of shock and disbelief. Two subthemes included wider normative references and time to develop and use skills. Wider normative references ($n = 14$) included opportunities to consider previous interactions with students and to broaden expectations regarding student behavior. ECTs emphasized that hands-on, direct experience in real classrooms with real students enabled them to better anticipate and more accurately predict student behaviors under various conditions, thus guiding teacher choices to repeat or avoid previously used strategies. One ECT explained, “Every year, you just get a larger knowledge base of what kids are going to do, and I think it’s easier to deal with because you have more expectations of what is going to happen, or maybe you’re able to predict better.” Coaches provided “another pair of eyes” and opportunities to “see” interactions that were hard for ECTs to observe. As an example, “[Coaching] made me understand where the behaviors and comments were coming from and that is food for thought. People can tell you things that you don’t know yourself, but it doesn’t necessarily change what you do, but it makes you think about it and you get to the point where you eventually change it.” Time to develop and use skills ($n = 13$) was the second subtheme, which emphasized that on-the-job experience “bought them time” and maximized opportunities to benefit from strategies introduced during coaching, PLCs, and group seminars. One ECT explained, “I have more tricks in my toolbox to know how to motivate them. But I think it’s just getting the experience, getting more and more experience so each year it just gets a little easier.” Grant-sponsored professional development expanded some ECTs’ repertoire of strategies, including identifying

triggers (e.g., task difficulty) and experimenting with different practices (i.e., ignoring rather than attending to misbehavior), while coaches “brought those strategies to life.” One ECT explained that coaching provided “concrete ways to run centers, and use [behavior] management techniques in the classroom, and that was positive. I used the good behavior game during coaching, and I really like it, and it did really help a lot.”

Shift in Perspective

The next theme, shift in perspective, reflected teachers’ appreciation for the complexity of interactions with students and their multiple contributors. The first subtheme, avoiding personalizing misbehavior and self-blame ($n = 9$), represents ECTs’ effort to alter their interpretations of disruptive behaviors by recognizing the wide range of person and situation factors contributing to them and, in turn, reducing their natural inclination to personalize challenging interactions. One ECT shared, “One of my problems is that I get emotional about things, like if my kids are misbehaving I often feel as if it is my fault. Now it [disruptive behaviors] makes me less emotional and I’m able to pull myself back and not blame myself.” These ECTs described the process of reinterpreting disruptive behaviors as not simply the product of poor instruction but additionally influenced by circumstances outside the classroom or school (e.g., challenging family circumstances, strained peer relationships). Coaches helped ECTs avoid self-blame by perceiving challenges as normative rather than exclusively the result of personal deficiencies. One ECT shared that, through her work with the coach, she learned that “To be a good teacher, you have to personalize things, but when it comes to behaviors, you can’t always do that. Or if you are constantly feeling like it’s your fault or you did something, it’s not productive. It may not have anything to do with me. It could be something outside of my classroom.” The second subtheme, realistic expectations for effectiveness ($n = 10$), represents ECTs’ development of more reasonable expectations regarding classroom management and engaging learners. One ECT

shared, “My first instinct is to get irritated when kids are sitting there and not listening. And then I have to remember they are seven and eight years old.” ECTs noted that some behaviors were out of their control and absolute proficiency (e.g., reaching all students, eliminating defiance) was not a credible marker for success. Instead, effectiveness ebbed and flowed based on content, time of day, time of year, and individual student personalities. One ECT explained, “Some things are out of my control, and I deal with it as best I can. Not that I don’t have good classroom management, but some students just have those busy personalities. You can do some things, but I can’t stress myself out, and that’s what I was doing last year.” The third subtheme, seeing positive change and room for improvement ($n = 10$), underscored ECT appreciation for a genuine improvement in maintaining student engagement and responding to disruptive behaviors (“I think it’s gotten a lot easier, and I think there’s a lot less problems, or maybe I’m just quicker to stop the problem before it becomes too big”) while acknowledging that significant effort was still required to achieve ongoing progress (“but there is still some work to do. I’m still not there. It’s not easy”). Some ECTs noted the relationship between idiographic strengths and weaknesses and skill development, with one teacher sharing, “I still really like the implementation and designing of lessons, but behavior is still an issue, and for me, being consistent I think will always be an issue. It’s something I have to work hard at.”

Barriers to ECT Effectiveness

Two themes emerged related to barriers to ECT effectiveness, including inadequate preparation and organizational barriers. Exemplars for each are detailed.

Inadequate Preparation

Consensus coding revealed two related but distinct subthemes regarding ECT perceptions of inadequate preparation to handle disruptive behaviors and differentiate instruction. The first subtheme, gaps in preservice training ($n = 10$), reflected limited coursework and

student teaching experience in classroom management, which in turn minimized opportunities for developing perceptions of effectiveness early in ECTs' teaching career. The majority of ECTs (12 of 15) received no formal training in classroom management and had limited exposure to evidence-based practices targeting disruptive behaviors. One teacher explained at baseline, "Behavior management was not something they covered in my training. So when I do run into those things, I don't have those skills built into me." ECTs expressed bewilderment and confusion as to why this integral part of their training was overlooked: "For some reason, I don't know why, they don't talk about that [preparation to manage behaviors] in preservice." ECTs with some training in classroom management (3 of 15) perceived the materials and methods (i.e., lectures, textbooks) as failing to capture the complexities of urban classrooms, where extended exposure to a range of challenging behaviors is necessary to build proficiency. The second subtheme, reality shock ($n = 11$), represented an alarming disparity between ECTs' expectations and their actual classroom experience, with one ECT explaining, "I think I had a concept of behavior, but I didn't understand explicitly what those behaviors would be. So I was always shocked by things that were happening." ECTs felt overwhelmed by the nature and severity of disruptive behaviors, which impeded their ability to think on their feet and respond effectively; as an example, one ECT noted, "My first year, I had no idea what to expect, and kids would do things, and I'd just sit there and go oh, my goodness, I cannot believe you're doing this."

Organizational Barriers

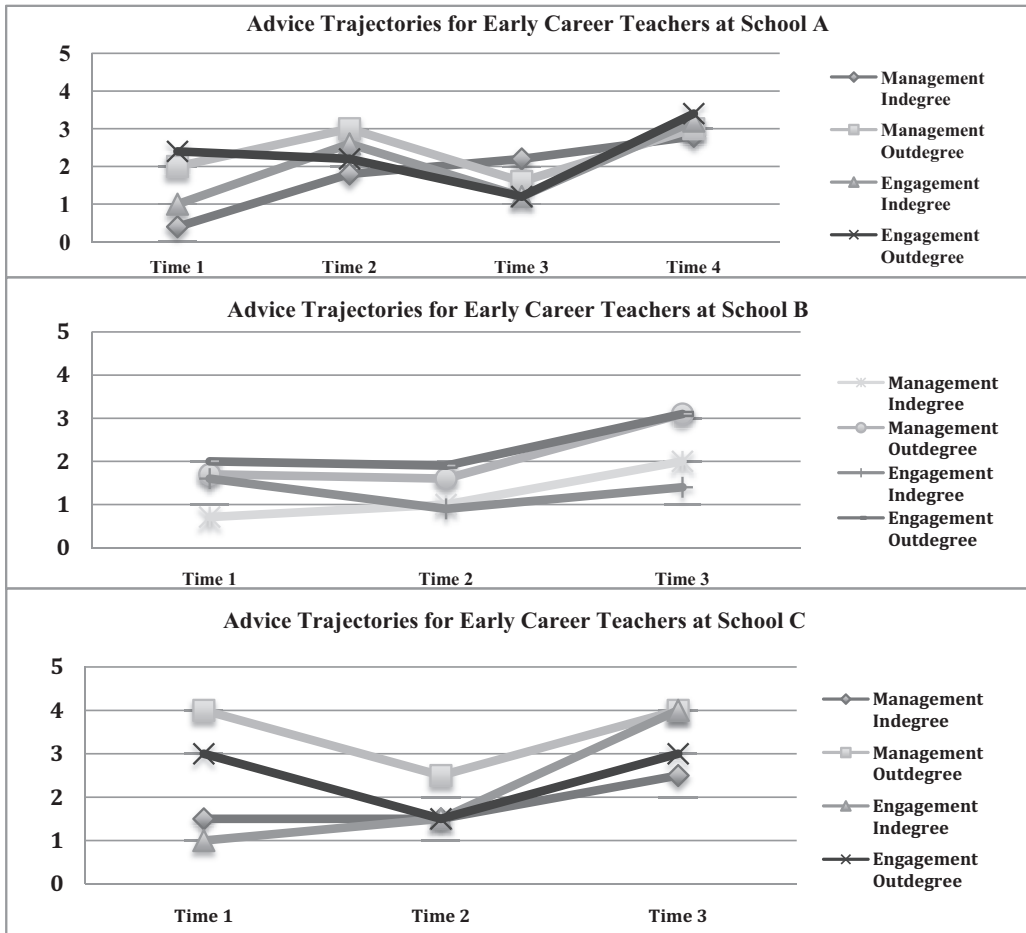
Consensus coding revealed that structural, school-level policies and practices also interfered with perceived effectiveness. Chronic disruptions and disorganization ($n = 12$) included perceptions of a chaotic, unpredictable, disorganized, and loud work environment that restricted ECTs' ability to deliver lessons, manage time effectively, and maintain student engagement. As an example, one ECT

shared, "The school is a little chaotic, the scheduling is not on time. You think you're getting the kids at 8:00, but they might not arrive until 8:10, by the time you get them seated it's 8:15, you have twenty-five minutes to do a 40-minute lesson. So I am trying to figure out how the school will run day to day." ECTs provided examples of intercom interruptions, unpredictable changes to teaching assignments and school schedules, late hiring practices, and noise outside the school that interfered with instruction. During one of the interviews, an ECT lamented the sound of a car horn and stated, "I hate that they do that during class, blasting music and then you have the train and when the train goes away you think you can teach without any noise, surprise you have a song [outside] that the kids love and now everybody wants to sing. Makes it challenging to keep kids engaged." Lack of consequences ($n = 8$) for severe disruptive behavior reflected frustration with inconsistent organizational response to more severe disruptive behaviors or rule violations, with one teacher sharing, "The reason that I'm not very good at it [classroom management] or it doesn't work is . . . because there's no consistent discipline procedure in our school so I call parents until my nose bleeds but if nothing happens with our school and if I'm not backed up then nothing happens at all." ECTs expressed a lack of confidence in their ability to make substantive progress in classroom management without administrative support and prompt and fitting consequences for severe behavioral infractions. As an example, one ECT stated, "It's really hard because of the lack of administration support to diminish the disruptive behavior, the lack of consequences, the lack of consistency. Classroom management fails from the top down."

Trends and Themes Related to Connectedness

Quantitative measures (sociometric interviews, rating scales) examined numeric changes in teacher connectedness. Social network analyses of sociometric interviews evaluated whether ECTs developed new advice

Figure 1. Advice Trajectories Averaged Across ECTs by School



Note. ECTs = early career teachers; “Indegree” = colleague seeks advice from ECT; “Outdegree” = ECT seeks advice from colleague.

relationships over time. Figure 1 illustrates advice trajectories averaged across ECTs, with ties inward (in-degree; i.e., colleague sought advice from ECT) and outward (out-degree; i.e., ECT sought advice from colleague) generally increasing over time, suggesting ECTs were developing new advice relationships. A drop from Time 2 to Time 3 reflected the transition from the end of one school year to the beginning of the next and suggests positive trends in advice seeking were confined within one school year. Table 1 illustrates changes in ECT scores on the PCI (Bryk et al., 1999) with an 8-point increase from Time 1 to Time 4

($M_{T1} = 82.4, SD = 16.3$ versus $M_{T4} = 90, SD = 12.2; d = 0.3$). RCI scores indicate that 53% of ECTs showed meaningful improvements in perceived connectedness, 26% exhibited no change, and 20% showed declines. Similar to sociometric data, PCI trends were confined to the same school year, wherein scores increased from Time 1 to Time 2 (beginning to end of Year 1), then decreased between Time 2 (end of Year 1) and Time 3 (beginning of Year 2), and increased again between Time 3 and Time 4.

Two-level mixed-effects regression models (Hedeker & Gibbons, 2006) were justified as

the variance component of the random intercept was significant (Wald statistic = 4.96, $p < .0001$). Within-subject variation was incorporated into the inferential process to reduce errors and improve power. Goodness of fit was assessed via the Akaike Information Criterion and Bayesian Information Criterion. Fifteen percent of the observations were missing for three reasons: (a) the teacher did not complete a measure during that time point, (b) the teacher moved to a different school, or (c) the teacher withdrew from the study. We imputed all missing values using various methods (i.e., between-subject mean imputation for the first time point, last observation carried forward for the fourth time point, and within-subject imputation for the second and third time points). Results with imputed missing values did not differ from those obtained from incomplete data; therefore, results are presented without imputations.

Two-level mixed-effects regression models accounting for clustering of observations within individuals revealed a statistically significant effect of intervention over time on school personnel's ($n = 57$) experience of professional community measured by the PCI, $t(2.36)$, $ES = 1.27$, $p = .019$. Table 1 illustrates convergence of quantitative (PCI scores) and qualitative (interviews) measures of connectedness. Mean PCI scores increased over time, corresponding to interview data revealing an increase in the number of excerpts coded as strong connectedness and a decrease in the number of excerpts coded as moderate or weak connectedness.

Facilitators to Connectedness

Two themes emerged related to facilitators to connectedness. The first theme focused on how organized group training facilitated ECT connectedness with colleagues and the second theme focused on individual relationships.

Organized Group Training

Thematic analyses revealed that PLCs and group seminars provided instrumental and social support along with opportunities to create shared norms for classroom management

and engaging learners. The first subtheme, colleagues as resources ($n = 14$), described opportunities to adapt existing practices and learn new practices from colleagues. One ECT explained, "I feel like that's such an important piece, being reflective and I think the best way to be reflective is actually talking with people and sharing ideas and strategies because you can self-reflect but you only get so much out of that. The way to improve on your craft is to have a chance to actually think about what it is you're doing and learn from colleagues." Some ECTs preferred connecting with near peers to develop concrete strategies for their classrooms. For example, one ECT stated, "The professional learning communities for the newer teachers has been helpful because we can really talk about the issues we're having and break it down. So if you can talk it through and think of strategies, that really is helpful, and I really see how this program has helped me deal with behavior problems effectively." The second subtheme, social support ($n = 13$), reflected an opportunity to observe and experience a shared set of challenges with colleagues, which ECTs described as comforting (e.g., "group seminars were good because they allowed me to not feel like I was going through things by myself. They would offer support, and that definitely helped me"). Social support combated isolation and helped ECTs appreciate that difficulties were normative. One ECT reflected, "That is the thing with seminars, I realized, that those problems exist, maybe not the same amount as they do in my classroom. But they exist." The third subtheme, shared norms and values ($n = 9$), reflected a sense of cohesion and consistency in school culture that emerged from group trainings where opportunities to develop and publicize school-wide rules and norms were highly valued. "PLCs and group seminars have forced us, in a good way, to collaborate and agree on how we want things to be at our school. If we hadn't met in PLCs certain things wouldn't be implemented. We talked about how students should act in the hallway and uniforms and stuff . . . this is something we need to do as a whole. It provided an opportunity to work together."

Individual Relationships

Consensus coding revealed that ECTs relied on relationships with seasoned educators who shared their understanding of and appreciation for the professional challenges of teaching (e.g., coaches, friends, family members). The first subtheme, instrumental support ($n = 13$), represents ECTs' efforts to leverage these relationships—especially when someone had experience in urban, high-poverty settings—by seeking support around teaching effectively, managing disruptive behaviors, and improving skills. One ECT explained, “the coach used to be a principal, she’s been a teacher at all levels so she can see the whole picture and try to help you fill in your gaps.” Another ECT shared that she seeks support from a former teacher and mentor with extensive experience in urban schools, explaining, “So if I really had an issue and wanted to call and ask her a question about how to set up a certain lesson or how to teach a certain reading strategy, she could still help me from afar.” The second subtheme, sounding board ($n = 8$), illustrates that some ECTs wanted to be transparent about their classroom experiences without fear of being judged or evaluated. They described the value of their coach being an “outside voice” perceived as unbiased; for example, one ECT said, “When the coaching was in place, it was helpful. Just to have the sounding board, to have some kind of outside voice. I think it’s always good when you have an outside voice in any situation because . . . they are not biased one way or another about the situation. Sometimes when you hear a voice from the inside telling you something, you feel like they’re being biased or they’re kind of against you. When it’s an outside voice, they just give you an opinion.” The third subtheme, positive expectancies ($n = 8$), represented ECTs' expectations that interactions with coaches would be reinforcing and positive—that the person on the other side would be receptive, optimistic, and hopeful regarding their skills. One ECT described, “[The coach] would observe me and tell me what I’m doing well or that he’s seen other art programs and that he thinks my art program is really great. Those are really good cookies in

my week. Knowing that I was going to see somebody friendly and there was going to be a nice thing happening.” ECTs explained that these relationships helped to combat the more frequent negative interactions they had throughout the year, with another ECT explaining that in contrast to the principal, her coach is that “person that comes in, sees what I do, cares, notices it, appreciates it and talks to me about it.”

Barriers to Connectedness

Thematic analyses also focused on barriers to ECT development of connectedness. Barriers that emerged included organizational barriers and limited time, both described in greater detail below.

Organizational

Consensus coding revealed barriers related to school structure, policies and practices, teacher roles, and transitions that interfered with personal and professional connections to colleagues. The first subtheme, dissatisfaction with school-level meetings ($n = 12$), included infrequent or unproductive faculty and grade-level meetings. Several ECTs wanted leadership teams to set a more cohesive tone within the building and to create regular opportunities for faculty communication. One ECT explained, “We don’t have opportunities to bring groups of teachers together to talk about what’s hard about teaching. Sometimes we get to that during professional development days, but it’s a tangent, when we’re supposed to be doing something else.” Another teacher shared, “So many things have come down from the district, where they’re like ‘you have to do this, this and this,’ so our professional developments are structured which leaves less opportunity to really talk about teaching.” The second subtheme, physical structure of school ($n = 12$), appeared to facilitate a sense of isolation for some (“There are four different stories in the school. And the gym is on the first floor, and then everyone else is upstairs. So we don’t really interact enough with other teachers.”). The cellular nature of classrooms and lack of space for informal meetings with colleagues (e.g., no faculty lounges) minimized opportu-

nities for connectedness, as illustrated in the following statement: “I hardly see any adults and so developing a sense of connectedness with colleagues is almost impossible because of the time that I spend with my kids [in the classroom].” Unique roles ($n = 6$) was the third subtheme, reported by a subset of ECTs (40%) who were not general education teachers. Not only were there fewer content-related opportunities to collaborate, but also these ECTs expressed feeling undervalued, like second-class citizens and glorified babysitters rather than “real teachers” who deserved to be included in group planning sessions and meetings. One ECT shared, “They treat me, the technology, and the music teacher as ‘okay, you get to babysit the kids for an hour so the other teachers can get a break, plan together as a team, and discuss students.’” The fourth subtheme, transitions ($n = 11$), included chronic staffing changes within and between years, necessitating constant shuffling of professional relationships. As an example, one ECT noted, “When you don’t know [new hires] there is a lack of trust. With jobs being so cutthroat you always get edgy and suspicious, and I felt like a fish out of water this year. Some of my really good friends were gone, and I felt lost.” ECTs also described changes in positions, roles, and teaching assignments as interfering with their effort to maintain relationships with colleagues, in particular those who were instrumentally supportive but no longer accessible. One ECT reflected, “Ms. X used to be someone that I really valued talking to, so it’s really hard that we don’t talk anymore, because she has a new position in the school this year. We used to talk all the time.”

Limited Time

Consensus coding revealed that limited time was another barrier to connectedness. The first subtheme, connecting on own time ($n = 7$), reflected that the onus was often on ECTs to link with colleagues outside of contract time (e.g., before or after school, on weekends, via e-mail). However, some teachers, especially those with families, were hard to reach. One ECT explained, “I stay late a lot, and I come in early. A lot of teachers can’t do

that. They have children, they have other responsibilities, and sometimes we may need that extra time to spend with each other to really talk and get things done. But life outside of work gets in the way.” Another teacher explained, “It’s so often, like work, work, work, got to get to the gym, got to get to the library, we have to go here, here, and here, give this test so there’s no time for teachers to talk to teachers.” Some ECTs described capitalizing on small moments and fleeting interactions (e.g., switching classes), which were described as insufficient. The second subtheme, workload ($n = 12$), referred to structural characteristics (e.g., large class sizes) and an abundance of responsibilities (e.g., weekend preparation and extensive paperwork) that minimized time for nurturing personal and professional connections. One ECT shared, “We have a smaller staff now than in September, and I think right now our classes are a lot larger, we have a lot more work on our hands, more papers to grade so we don’t hang out as much.” Workload also dissuaded ECTs from asking for support from colleagues whom they perceived as overwhelmed by similar burdens and time constraints. As an example, one ECT stated, “Ms. X is amazing and we would talk about students and she would help me with instruction, but she has a lot on her plate so it’s hard to connect. It does not happen anymore. There’s no time because of everything else we have to get done in a day.”

DISCUSSION

School psychologists’ unique expertise in teacher consultation, evidence-based interventions, and organizationally based interventions, such as RTI and Positive Behavioral Interventions and Supports, positions them to support or oversee support to ECTs who face predictable challenges managing classrooms, engaging learners, and connecting with colleagues (Ingersoll, 2001). To date, however, their role has often been restricted to working with Tier 3 students (via assessment and eligibility determination) despite a preference to engage in more teacher consultation and intervention (Hosp & Reschly, 2002). The inter-

vention developed and tested herein represents our team's vision to expand the role of school psychologists to leverage their expertise and to reduce ECT turnover. Through a convergent, parallel, mixed-method design, we examined the feasibility and initial promise of the model, combining quantitative and qualitative data to provide a complete understanding of the development of effectiveness and connectedness.

Delivery of Intervention Components as Designed

Average attendance by ECTs at group seminars was 70%, while average attendance at PLCs was 80%, suggesting we were generally able to deliver group-based professional development to teachers. Group seminar and PLC attendance was strongest early in the school year and declined midyear, which may reflect stress cycles identified in the literature (Reynolds, 1992; Veenman, 1984). Given that limited time emerged as a barrier to connectedness, variations in attendance during the school year may reflect competing demands. This may be the case, in particular, for group seminars, where ECT attendance was not as strong relative to PLCs. Group seminars, for example, were delivered exclusively after school, in contrast to PLCs, of which 56% were delivered during district-wide professional development days. Coaching was delivered weekly during Year 1 (1.5 hr), as originally designed, and twice per month (1.2 hr) during Year 2, reflecting a reduction in frequency and duration but still a fairly intensive amount of support. When time spent in various coaching meetings was examined, dosage data revealed less time spent in postconferences relative to classroom visits and preconferences. This may be explained in part by unpredictable scheduling changes that ECTs revealed during interviews, which may have interfered with postconferences. Coaches were also external to the school, which restricted their ability to accommodate last-minute scheduling changes. Coach logs revealed more coaching time was spent covering evidence-based behavior management strategies (e.g.,

using a functional behavior approach emphasizing antecedents and consequences) compared with engagement strategies (e.g., paired reading), which converged with thematic analyses, underscoring that disruptive behaviors were common and difficult to manage.

Implementation data revealed that mentors and coaches relied on didactic strategies, discussion, and observation more than active learning. ECTs reported fewer opportunities for demonstration, extended practice, or explicit performance feedback despite these components being associated with higher engagement, motivation, and skill transfer when compared with passive learning strategies (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Joyce & Showers, 2002). In our next iteration of the model, we intend to work closely with administrators to allocate time during the instructional day for conferencing to maximize opportunities for planning and reflection. We also will focus more explicitly with coaches and mentors on increasing opportunities for active learning and performance feedback.

Trends in Effectiveness

Only one ECT was lost to turnover because her contract was not renewed, which is considerably lower than turnover rates in this large urban district (50% turnover every 3 years in the highest poverty schools; Allensworth, Ponisciak, & Maseo, 2009). Although we cannot attribute high retention to the intervention, low turnover within this small sample is still noteworthy given significant stressors facing teachers in high-poverty schools and widespread challenges implementing evidence-based practices (Kratochwill, 2007). Close to two thirds of ECTs improved in observed quality of classroom organization (i.e., behavior management, management of instructional routines, and maximizing engagement) by the end of Year 2, highlighting the preventive role the model can play. Visual analyses of change over time in Classroom Organization domain scores illustrated that 50% of ECTs took 2 years to make gains, with the greatest increases occurring between Time 3 and

Time 4. These findings compare favorably with prior studies reporting changes of 0.5 to 1 (on a 7-point scale) within a 1-year intervention (Pianta, Mashburn, Downer, Hamre, & Justice, 2008).

Qualitative interviews confirm these numeric trends while extending meta-inferences regarding the context and complexity associated with ECT development of effectiveness. Interviews showed that low self-efficacy was not simply a function of inadequate skills but also inadequate support and highlighted the extent to which insufficient training coupled with the shocking reality of urban classrooms left ECTs feeling unprepared and ineffective. ECTs also described the lack of school-wide consequences for severe behavioral infractions as negatively affecting their ability to manage their classrooms, which could explain why some teacher efficacy (both self and observed) remained relatively stable over time. These findings are consistent with descriptive studies identifying novices as entering the profession with limited behavior management training and the turnover literature documenting “transition shock” associated with disruptive behaviors (Cochran-Smith et al., 2012; Veenman, 1984). Meta-inferences drawn between quantitative and qualitative data suggest that building ECT effectiveness is substantive and complex. Individual components of the intervention were designed to promote new skills for ECTs, and school psychologists are uniquely positioned to support skill acquisition given their expertise in consultation and evidence-based practices and indigenous role within the school. However, we suspect these individual components may be necessary but insufficient, and more pragmatic supports, including stronger training in classroom management and ongoing administrative support, may maximize their combined impact (Grossman & McDonald, 2008).

Trends in Connectedness

Social network analyses suggested positive trends over time in the development of new advice relationships between ECTs and their colleagues—an increasing number of

teachers sought advice from ECTs, and ECTs sought advice from a wider network of colleagues. Similar positive trends were noted on the PCI and confirmed in the interviews. The effect of the intervention on school personnel experiences of professional community was significant, suggesting the promise of the PLCs may extend beyond ECTs. Hence, PLCs met our goal of connecting ECTs with their larger network of both novice and more experienced colleagues. Thematic analyses of interviews underscored that organized group training provided opportunities to nurture and socially ground ECTs within their school communities, where they were able to rely on colleagues as resources and where shared norms and values evolved. Consistent with the strong attendance observed at PLCs in particular, qualitative data illustrated that organized group training provided additional opportunities to collaborate with colleagues who were otherwise unavailable. Given time demands, dissatisfaction with existing faculty meetings, and the physical structure of schools, organized group training may have served to combat isolation experienced by some ECTs, a phenomenon that is well established in the literature (Bryk & Schneider, 2002; Bryk et al., 1999). Organized group training provided much-desired opportunities to influence the school culture and may serve as a protective factor for ECTs seeking both instrumental and social support. School psychologists bring expertise in teaming, RtI models, and intervention that position them well to support group-based interventions such as group seminars and PLCs for teachers, toward the goal of supporting connectedness and enhancing schools to function as healthy settings.

Findings from PCI and sociometric data revealed that positive trends in connectedness (i.e., increases in number of connections with colleagues) were confined within one school year. The pattern of increases (from beginning to end of a school year) and decreases (from end of one school year to beginning of the next) converged with qualitative data illustrating how transitions and changes in staffing patterns interfered with ECTs’ previously established relationships. This is noteworthy be-

cause it suggests that teachers need to reboot their professional relationships at the start of the school year rather than assuming that past relationships will remain intact or spontaneously resume. This finding has implications for the timing of PLCs; for instance, scheduling more frequent meetings early in the school year may allow teachers to acquaint themselves and provide desired and consistent opportunities to connect with colleagues.

Future Directions and the Role of School Psychologists in Supporting ECTs

In the past several decades, there have been calls to diversify the role of the school psychologist to support the delivery of comprehensive services across universal, selected, and indicated levels (NASP, 2013). On the one hand, there is much enthusiasm for school psychologists' long-standing and important role in eligibility determination and advocating on behalf of students with intensive needs. On the other hand, a diversified role could better leverage school psychologists' unique skills to support teaching and learning at a universal level, in turn promoting healthy classrooms and reducing student referrals (Kratochwill, 2007). Perhaps contributing to these divergent views is that school psychologists are already overwhelmed and overextended; therefore, how can we possibly expand their role or extend their responsibilities?

Careful examination of time and task distribution of school psychologists may be brought to bear on the challenge. Prior research has established that school psychologists are best positioned to support classroom teaching for three primary reasons: (a) They are an indigenous workforce that is sustainable, (b) they have established relationships with teachers, and (c) their expertise corresponds directly to teacher needs related to classroom management and engaging learners (Atkins et al., 2015; Cappella et al., 2011; Kratochwill, 2007). Despite role fit, school psychologists' current job demands lead to an underutilization of their unique and critical expertise—a situation that urban schools can-

not afford given the overwhelming needs of students and teachers. We propose that ECTs represent a small but important subset of teachers with the highest needs and the most to gain from targeted support. Allocating time to coach or mentor ECTs may be a realistic and efficient starting place for school psychologists that, in turn, should improve classroom functioning and reduce referrals for more intensive services.

Toward this end, the current study was designed to more fully understand what is necessary and sufficient to build ECT skills. The next step in this program of research includes disseminating findings with new school districts and examining more explicitly the role school psychologists can play within the model, including potentially replacing or supporting the coach and working in concert with KOLs to facilitate PLC meetings (NASP, 2013).

Limitations

A number of limitations are worth noting. First, causal inferences are difficult to establish without a comparison group, and thus we must consider that history and maturation could explain the improvement reported over time on our dependent measures. Indeed, while the first few years of teaching are inherently challenging, they also represent an opportunity for major professional growth, and improvement may reflect the natural process of ECTs accumulating experience rather than the direct result of supports received. In addition, co-occurring professional development (e.g., school-mandated professional development workshops) may have contributed to improvements (Shadish, Cook, & Campbell, 2002).

Second, although we triangulated findings across multiple methods (e.g., interviews, rating scales, and classroom observation data), these data were collected from a single source—teachers. This decision was guided by the developmental nature of the grant and focus on proximal outcomes related to teacher effectiveness and connectedness. Our future work will include multiple sources and student outcomes (e.g., student disruptive behavior) to

examine the promise of the model in affecting distal outcomes. Third, we initiated this work in partnership with one urban school district and would refrain from claims regarding its potential generalizability. However, aligned with the developmental funding mechanism, the goal of this study was to develop and iteratively refine a professional development model for ECTs, as well as to think with district leaders about a diversified role for a school psychologist that supports teachers in addition to students. Although we cannot obtain an unbiased estimate of the intervention effect, and the study presented herein represents an early stage of research, we believe the mixed-method findings suggest the intervention holds promise and supports our theory of action.

CONCLUSION

Given the urgent, high-stakes, and unmet student needs facing ECTs in high-poverty, urban schools, findings from this study provide preliminary evidence for a promising intervention that should be of interest to school psychologists whose unique training positions them well to help novice teachers enhance their skills and connect with colleagues. Emphasis on effective classroom management and engaging all learners serves as primary prevention that can benefit all learners and reduce the need for more intensive services for a subset of students. Findings highlight the need for intensive, sustained, targeted support to enhance perceived and observed effectiveness and expand connections with colleagues. Given the overwhelming needs of ECTs and corresponding expertise of school psychologists, the current model may help to shift thinking around the role and function of school psychologists toward maximizing their reach and impact in schools where the resources are limited and the needs are overwhelming.

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