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Cooperating Teacher as Model and Coach: What Leads to Student Teachers' Perceptions of Preparedness?

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Abstract

Drawing on survey and administrative data on cooperating teachers (CTs) and their preservice student teachers (PSTs) in Chicago Public Schools during 2014-2015, this study offers an in-depth look at reports of how CTs engage in their mentoring roles during student teaching, and their influence on PSTs. Our sample includes CTs working with PSTs from across 44 teacher preparation institutions. Central to our analysis is an exploration of CTs as both models of effective instruction and as facilitative coaches on PST development. We find that both CT roles matter—PSTs feel better prepared to teach when their CTs model effective instruction and coach by providing more instructional support, frequent and adequate feedback, collaborative activity, job-search support, and a balance of autonomy and encouragement.

Keywords

student teaching, teacher education preparation, mentoring, cooperating teachers

Introduction

Student teaching, a longtime cornerstone and key clinical experience of teacher preparation, has recently become the subject of multiple reform and policy debates (National Council for Accreditation of Teacher Education [NCATE], 2010; National Research Council [NRC], 2010). Cooperating teachers (CTs) are one of the most acknowledged yet least understood contributors to the student teaching experience (Clift & Brady, 2005; Feiman-Nemser & Parker, 1993; Grossman, 2010; Guyton & McIntyre, 1990; NRC, 2010; Zeichner, 1980). Despite being viewed as key partners in teacher preparation, we know little about the kinds of mentoring that CTs provide and its effects. In this study, we take an in-depth look at reports of how CTs engage in their mentoring roles during student teaching, and their influence on preservice student teachers (PSTs).

Growing calls for attending to CT quality often assume that being an experienced or effective teacher is a sufficient prerequisite for being an effective mentor. For instance, many states place minimum eligibility requirements on CTs in terms of years of teaching experience or tenure to work with a PST. Yet there is little empirical evidence that experienced or effective teachers make better mentors. In fact, it is possible that being an effective teacher of P-12 students is less important to effective mentoring than being able to provide quality feedback or balance between autonomy and support. Thus, this study considers the dual, complex roles held by CTs as both models of effective instruction and coaches who facilitate beginning teacher development. More specifically, we ask, *What aspects of CT as model and coach are related to PSTs' self-perceived perceptions of preparedness to teach?*

To answer this question, we draw on unique data about CTs who mentored student teachers across the entire Chicago Public School (CPS) district during the 2014-2015 academic year. We surveyed CTs and their PSTs about their mentoring, and linked the survey data to administrative data on CTs and the schools in which they work. These data provide a district-wide perspective on the mentoring practices CTs use, and their intended versus actual impact on PSTs during student teaching.

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This study makes progress in conceptualizing and measuring the complex mentoring work in which CTs engage by providing the only large-scale evidence, of which we are aware, linking measures for CT as models and coaches to PST outcomes. We find evidence that both CT roles—model and coach—matter. Specifically, PSTs feel better prepared in some domains of instruction when (a) their CTs modeled more effective teaching (as assessed by district evaluators and PSTs) and (b) their CTs offered coaching in the form of stronger instructional support, more frequent and adequate feedback, a balance of autonomy and encouragement, better collaborative coaching, and higher levels of job-search assistance as reported by PSTs.

Literature Review and Theoretical Framing

The terms *mentor* and *mentoring* are used frequently in the teacher education literature to refer to various individuals and processes that share the goal of improving a teacher's practice. One might serve as a mentor to, or engage in the mentoring of, a preservice teacher, a beginning teacher, or even a more experienced teacher—the terms are often used interchangeably across the continuum of teacher development. But what does the work of mentoring entail, and with what effects?

In this study, we seek to more clearly understand and measure different aspects of mentoring that occur during preservice preparation between CTs and their student teachers. In our review of the literature, we therefore distinguish between CTs as *models* of exemplary teaching practices and CTs as facilitative *coaches* of teacher learning. Being a "model" refers to a CT's capacity to engage in effective instructional practices for P-12 students' learning; primarily through observation, PSTs benefit from exposure to effective practice. We refer to CTs' "coaching" moves, on the contrary, as intentionally targeting the learning of PSTs. These two facets of mentorship are far from exhaustive, or even mutually exclusive, but we put them forth as distinct constructs in our analysis because they represent two different ways of approaching the work of mentoring PSTs, and have implications for how CTs might be recruited and developed.

CTs as Models

A commonly held assumption is that student teaching should provide PSTs ample opportunity to observe exemplary instructional practices in the context of P-12 classrooms. CTs who consider their primary role as model prioritize enacting high-quality instruction to P-12 students, ensuring that PSTs have access to sustained examples of effective practice. PSTs, CTs, and teacher education program (TEP) faculty alike agree that being a good "modeler of practice" is an important role for a CT (Clarke, Triggs, & Nielsen, 2014; Copas, 1984). Rozelle and Wilson (2012) demonstrate, for example, that PSTs tend to mimic specific actions and statements of CTs. Consequently, one might expect PSTs to be better prepared when they have opportunities to observe more effective teachers of P-12 students. In their review of more than 450 studies, Clarke et al. (2014) identify 11 "categories of participation," or roles that CTs may play in their work with PSTs. Based on their extensive review of the CT literature, the authors also concluded that "CTs who have teaching experience, expertise as classroom teachers, and a commitment to professional learning make good mentors" (p. 191). However, these authors do not link CTs' qualifications, such as years of teaching experience to PSTs' instructional abilities. In fact, we are aware of no existing large-scale empirical evidence that PSTs felt more prepared to teach when placed with CTs who were more effective teachers.[1] Yet, indicators of teaching effectiveness with a particular emphasis on student performance scores are increasingly assumed to be important prerequisites in CT selection policies (i.e., National Council of Teacher Quality [NCTQ], 2017).

Even where PSTs have an opportunity to observe effective models of teaching practices by their CTs, more explicit support is likely needed for PSTs to successfully implement the observed practices (Becher & Ade, 1982; McIntyre, Byrd, & Foxx, 1996). For example, Anderson and Stillman (2011) found that PSTs rarely observed CTs' "backstage labor" of planning and reflecting. A PST from their study notes, "At least with the model you know where you want to go. You just have to figure out for yourself how to get there" (p. 452). One way that CTs can help PSTs "get there" is to go beyond serving as an effective model of instruction to also provide effective coaching.

CTs as Coaches

Coaching practices can take many forms, but they share the goal of facilitating PSTs' teaching knowledge, skills, and dispositions across multiple instructional domains. Feiman-Nemser (2001) work on "educative" mentoring highlights the importance of not only supporting PSTs in improving their teaching practice but also in cultivating their habits and capacities to continue to learn from their own practice throughout their careers.

One coaching practice intended to promote teacher growth is the provision of feedback. Surprisingly, several studies suggest that CTs rarely conduct observations or offer feedback to their PSTs (Borko & Mayfield, 1995; Valencia, Martin, Place, & Grossman, 2009). When feedback is offered, the literature often characterizes the quality of feedback as being too descriptive (Guyton & McIntyre, 1990), disproportionately focused on classroom management (McIntyre et al., 1996), more summative rather than formative (Grossman, Ronfeldt, & Cohen, 2012), or overly technical, "emphasizing the *what* and *how* rather than the *why* of practice" (Clarke et al., 2014, p. 175). There is some evidence that training mentors to conduct inquiry-oriented

Table 1. Summary of Survey Counts and Response Rates.

Survey administration	Timeline	Response rate
Pre-student teaching	Fall: August-September 2014 Spring: December-January 2015	77% (866/1,122)
Post-student teaching	Fall: December 2014-January 2015 Spring: May-June 2015	60% (672/1,122)
Mentor Teacher Survey	Fall: December 2014-January 2015 Spring: May-June 2015	74% (787/1,066)

Note. In all, 585 out of 1,122 (52%) student teachers in our sample completed both a pre- and a post-student teaching survey.

observations and facilitate reflective conversations with PSTs results in more frequent and higher quality feedback (Giebelhaus & Bowman, 2002). However, there does not seem to be consensus in the literature about what constitutes "higher quality" feedback. Further research and greater investments are needed to support CTs in providing quality feedback (Clarke et al., 2014; Grimmett & Ratzlaff, 1986; Grossman et al., 2012; Valencia et al., 2009).

Other coaching practices are in the form of collaborative work between PST and CT. These activities might include co-planning, co-teaching, and sustained inquiry into teaching practices—all of which authentically initiate PSTs into the complexities of teaching and learning. Numerous studies have also emphasized the importance of a coaching context that facilitates trusting relationships (Ronfeldt, Reininger, & Kwok, 2013), encourages risk-taking, and balances appropriate support with sufficient autonomy (Yendol-Hoppey, 2007). These aspects of CT coaching, while frequently named as important in the literature, have thin empirical support. None, to our knowledge, have been linked to PSTs' performance of better teaching or feeling better prepared to teach.

Research Foci

CTs indeed play a central role in student teaching, but more large-scale research is needed to look across many institutions that prepare teachers to understand, on average, the mentoring CTs engage in, and with what effects. Most existing research on CTs is in the form of individual case studies of particular, and often boutique programs. Thus, we do not know whether these individual cases are representative of programs generally. In addition, few existing studies systematically link CTs' characteristics or mentoring to PSTs' observed or perceived instructional readiness. Our study addresses these gaps.

Looking at CTs working with PSTs that prepare teachers in CPS, we make several contributions to the existing literature. First, we investigate measures of CTs' instructional effectiveness, including observational evaluations, which have not been considered previously but capture the idea of being a model in our study. In addition, we describe the perceived amount, kinds, and quality of coaching reported by CTs and their PSTs, affording a unique perspective of CT coaching practice from multiple perspectives. Connecting measures of CTs as models of exemplary instruction and CTs' effectiveness as coaches to PSTs' self-perceived perceptions of instructional preparedness, we use two distinct and measurable constructs as ways to better understand the complex work of mentoring that occurs during the student teaching phase of teacher preparation.

Method

Setting

This study is situated in CPS, the third largest school district in the United States. CPS serves approximately 400,000 students who are predominantly Latino and African American.[2] Nearly 50 university-based institutions prepare hundreds of student teachers in the district with the help of more than 1,000 CTs annually. These institutions select CTs in a variety of ways ranging from asking PSTs to locate their own placements and mentors, partnering with schools and their administrators who determine CTs, and/or reaching out directly to CTs with whom they have prior experience or relationships; these selection processes are typically not managed or centralized at the district level. CPS has a mandatory centralized registration process for PSTs, which allows them to maintain records on PSTs, their programs, and their CTs. Recently, CPS instituted a comprehensive teacher evaluation policy that tracks the instructional effectiveness of all CPS teachers, including those who serve as CTs in our sample.

Data

We administered pre- and post-student teaching surveys to registered PSTs during the 2014-2015 school year, and post-student teaching surveys to their CTs. Survey administration timelines and response rates are listed in Table 1.[3] Surveys were sent by the district, via email, as addenda to the CPS online student teaching registration process prior to the start of the fall and spring terms. Toward the end of each term, our research team sent post-student teaching surveys by email to all registered individuals, offering a US$25 gift card to survey completers.[4]

Table 2. Analytic Sample of CTs (n = 500) and PSTs (n = 583).

Demographic/background characteristics	n, CTs	%/M (SD), CTs	n, PSTs	%/M (SD), PSTs
Male	500	21.2	563	22.2
White	500	66.6	583	62.6
African American	500	9.0	583	7.9
Latino	500	16.8	583	15.4
Asian/Pacific Islander	500	4.2	583	7.2
Other/undisclosed	500	3.4	583	8.7
PST/CT same race	500	52.0	500	52.0
PST/CT same gender	500	77.4	500	77.4
Holds postbaccalaureate degree (e.g., MA, PhD)	500	75.2	—	—
Years of CPS service	497	11.7 (6.8)	—	—
Holds tenure	499	90.0	—	—
National Board certified	499	16.6	—	—
Graduate of CPS	—	—	562	19.6
Parent/guardian	—	—	563	10.5
Age during 2014-2015	—	—	559	25.7 (5.9)
Undergraduate GPA (100-point scale)	—	—	562	90.3 (9.1)
Prior teaching experience (e.g., substitute)	—	—	583	29.0
25 years or older during 2014-2015 (birth: 1990 or earlier)	—	—	561	41.7

Note. Out of the 583 CTs in our analytic sample, 500 could be linked to personnel information. PST = preservice teacher candidates; CT = cooperating teachers; CPS = Chicago Public School. GPA = grade point average.

Using registration data and additional CT data collected by CPS, we identified the CTs of all PSTs registered to student teach and sent them individualized online surveys with offers of US$50 gift cards for completion. We administered CT surveys at the end of the fall and spring terms.[5] We then linked CTs and their survey information to CPS personnel and evaluation data, including information about their schools.[6]

Sample

Of our initial population of 1,066 CTs who worked with student teachers in the 2014-2015 school year, 583 (55%) worked with a student teacher who completed both a pre- and a post-student teaching survey. Of these 583 CTs who make up our primary analytic sample,[7] 500 could be linked to district personnel data about CT characteristics and qualifications, and 390 could be linked to CT survey data.[8] These CTs taught in 204 different placement schools and with PSTs from 44 teacher education institutions.

CT characteristics. Tables 2 and 3 summarize the characteristics of CTs and PSTs in our analytic sample. Two thirds of the CTs were White and nearly 80% were female. CTs were a seasoned group with, on average, almost 12 years of service in CPS. In terms of professional credentials, three quarters of CTs held an advanced degree (e.g., MA, MEd), 90% were tenured, and 17% had earned National Board Certification.

Table A1 compares background characteristics of CTs in different subsamples. In the left two columns, we compare CTs in our sample to all other CTs. These two groups of CTs were mostly similar except for a higher percentage of CTs in the sample being White. We also compared CTs who responded with at least one survey to all other CTs (middle two columns). There were no significant differences between CT respondents and nonrespondents, with one exception: CT respondents were more likely to have National Board Certification. However, when focusing only on CTs in our

Table 3. Analytic Sample of Placement Schools.

Placement school characteristics	n	%/M
Male	210	50.4
Latino	210	50.3
African American	210	26.4
White	210	14.8
Asian/Pacific Islander	210	6.2
Other race	210	1.9
Free/reduced lunch	210	79.6
Special education	210	15.4
Average 2013-2014 achievement (EPAS, Illinois Standards Achievement Test, and NWEA MAP assessments)	205	0.1 (0.5)
Secondary school (Grades 9-12)	209	27.8
Primary school (Grades K-8, K-5, 5-8, etc.)	209	72.2

Note. School-level prior achievement is measured in standard deviation units and is based on prior-year NWEA reading scores of current students (standardized within grade within year). A difference of 0.5 SD units reflects approximately the difference between a school with average prior achievement and a school with top-third (or bottom-third) prior achievement. EPAS is shorthand for a trio of tests = EXPLORE in Grade 9, PLAN in Grade 10, and ACT in Grade 11; NWEA MAP = northwest evaluation association measures of academic progress.

Table 4. Measures of Perceptions of Preparedness.

Planning and preparation	Classroom environment
(PST reliability = .90; CT reliability = .89)	(PST reliability = .90; CT reliability = .89)
Planning lessons	Developing relationships with students
Designing student assessments	Managing students' behaviors
Selecting instructional outcomes	Implementing classroom routines and procedures
Using results from assessments to improve teaching	Developing classroom communities for learning
Anticipating student misconceptions about content when planning for class	
Instruction	**Professional responsibilities**
(PST reliability = .91; CT reliability = .92)	(PST reliability = .89; CT reliability = .85)
Using developmentally appropriate instructional language	Maintaining accurate grades and student data
Posing variety of questions to probe student understanding	Performing administrative tasks
Facilitating discussions	Interacting with school administrators
Maintaining student interest	Communicating with families
Using variety of instructional methods	Reflecting on teaching (CT only)
Adapting curricula to fit students' needs	
Teaching subject matter	
Teaching in urban schools	**Common core**
(PST reliability = .92; CT reliability = .88)	(PST reliability = .84; CT reliability = .84)
Working with low-income students (PSTs only)	Planning lessons aligned to Common Core Standards
Designing instruction to meet variety of student abilities (PSTs only)	Creating formative assessments aligned with Common Core Standards
Responding to nonacademic challenges facing individual students	Working with Common Core aligned curriculum
Using knowledge about urban schools and communities to inform work	
Planning culturally relevant teaching strategies	
Using culturally relevant teaching strategies	

Note. PST = preservice teacher candidates; CT = cooperating teachers. Preservice teacher candidates were asked, "How prepared do you feel to begin . . ." Cooperating teachers were asked, "Now that your student teacher has completed his or her pre-service student teaching experiences, how well prepared is s/he to do the following . . ." The response options were "not at all prepared," "slightly prepared," "moderately prepared," "very prepared," and "exceptionally prepared."

sample (right side of table), respondents and nonrespondents were statistically similar on all background characteristics.

PST characteristics. Reflective of teachers nationally, just over three quarters of PSTs in our sample were female and the majority were White (63%). In all, 11% were parents or guardians, and more than 40% were at least 25 years old. While 20% of PSTs graduated from CPS, 35% graduated from suburban Chicago schools. PSTs' average undergraduate GPA (grade point average) was the equivalent of an A–. About three in 10 PSTs said they already had experience teaching or substitute-teaching. Among PST-CT pairs, more than half (52%) were the same race and more than three quarters (77%) were the same gender as one another.

Compared with PSTs outside our sample, a higher percentage of PSTs in the sample were female and White (see Table A2). This is a limitation of our study, as it suggests that results may not be generalizable to the full population of student teachers in the district.

Placement school characteristics. Table 3 describes the field placement schools in which PSTs completed student teaching. On average, placement schools served mostly Latino (50%) and African American (26%) students, with 80% qualifying for free or reduced priced lunch, and 15% receiving special education services. Just over one quarter of placement schools were at the 9 to 12 level. When compared with other CPS schools (see Table A3), field placement schools had, on average, more students who were Latino, Asian, and White and fewer students who were African American, eligible for free or reduced priced lunch, and receiving special education services.

Measures

In this section, we describe the focal outcome measures used in this study: PSTs' perceptions of preparedness to teach across different instructional domains (Table 4). We then describe measures of coaching used as focal predictors (Table 5). Rasch analyses were used to construct most of the measures.[9] Where minimum thresholds for reliability (.7) could not be met, we used individual survey items as predictors in our models (see Table 5 for details on which measures did not reach thresholds of reliability).

Perceptions of preparedness. The focal outcomes in this analysis were based on PSTs' self-perceptions of preparedness to teach in their own classrooms by the end of student teaching.

Table 5. Measures of Coaching.

Domain-specific instructional support	Adequacy of feedback + observation	Collaborative coaching
PST: Learned about domains in conversation with CTs [*nothing, a little, fair amount, great deal*] (PST reliability = .86) CT: Effectiveness of mentoring in the domains [*not at all, somewhat, effectively, very effectively*] (CT reliability = .72) 4 observation category Domains (part of REACH) Culturally responsive teaching domain	[*strongly disagree, disagree, agree, strongly agree*] (CT reliability = .75; No reliable PST Rasch measure) CT gave PST feedback frequently enough CT's feedback helped PST learn to teach CT's feedback was consistent with field instructor CT observed PST teach frequently enough	How often: [*never, less than once a month, once a month, 2-3 times a month, once a week, 2-4 times a week, daily*] (PST reliability = .86; no reliable CT Rasch measure) PST and CT codesigned lessons PST and CT co-taught lessons CT offered feedback on PST's teaching CT encouraged PST to practice specific aspects PST and CT analyzed student work together CT shared data/evidence after observing PST teach CT asked PST to observe CT teach
Frequency of feedback	**Autonomy and encouragement**	**Job assistance**
How often CT: [*never, once in a while, often, all the time*] (PST reliability = .90; CT reliability = .76) Offered concrete suggestions Offered general observations Asked reflective questions Referred to specific things PST did well Referred to specific things PST needs to improve Shared specific data when giving feedback (CT only)	[*strongly disagree, disagree, agree, strongly agree*] (PST reliability = .65; no reliable CT Rasch measure) CT helped PST feel comfortable taking instr. risks PST could go to CT for help when struggling CT's expectations of PST were appropriate CT allowed PST to make own instructional decisions	How often CT: [*never, rarely, sometimes, often*] (PST reliability = .85, CT reliability = .89) Offered advice on kinds of jobs to apply for Discussed specific job openings in placement school Helped PST prepare for an interview Offered feedback on PST's resume Discussed openings outside of placement school

Note. PST = preservice teacher candidates; CT = cooperating teachers.

Although these measures are based on self-reports, they provide us with a critical perspective on preparedness: that of the individual closest to the preparation process—the student teacher. Although program leaders and scholars commonly use survey-based measures of PSTs' feelings of preparedness to teach for program assessment and research purposes, we are aware of no published studies linking PSTs' feelings of preparedness to observable measures of their instructional effectiveness (e.g., observation ratings or value-added to student achievement measures [VAMs]) after becoming teachers of record. That said, scholars have found PSTs' feelings of preparedness to be related to teachers' self-efficacy (Darling-Hammond, Chung, & Frelow, 2002), which, in turn, has been linked to student achievement (Armor et al., 1976). In addition, using a nationally representative sample of teachers, Ronfeldt, Schwartz, and Jacob (2014) found teachers who felt better prepared were more likely to remain in teaching.

On both the pre- and post-student teaching surveys, we asked PSTs a series of similar survey questions about their readiness to assume teaching responsibilities in four domains of instruction aligned with CPS's teacher evaluation system: (a) planning and preparation, (b) classroom environment, (c) instruction, and (d) professional responsibilities. We added questions related to two additional domains: preparedness to teach (e) in urban schools and (f) using the Common Core. We submitted the post-student teaching surveys to Rasch analysis and used the results to anchor the responses on the pre-student teaching surveys, so as to obtain comparable measures of PSTs' sense of preparedness before and after student teaching; parallel survey items were asked on the CT survey and used to construct similar measures.[10]

CT as model. We used various measures as indicators for the quality of instruction modeled by CTs. First, we created a Rasch measure based upon a set of PST survey items that asked PSTs how instructionally effective they thought their CTs were in various domains of instruction and teaching in urban schools.[11] We refer to this measure as *PST-perceived domain-specific effectiveness* (PST reliability = .88).

As additional proxies for quality of instruction modeled by CTs, we used two measures from the REACH district teacher evaluation data system[12]: classroom observation scores[13] and VAMs for teachers in Grades 3 to 8, based on reading and math NWEA MAP tests available for a subset of teachers.[14]

CT as coach. We asked CTs about a number of experiences with their PSTs to understand perceptions of their coaching

practices. We used these CT self-reported data to create Rasch measures. Wherever possible, we asked PSTs similar questions to make the items parallel[15] and create comparable measures. Measures were created about domain-specific instructional support, which is coaching support provided in specific instructional areas (including those evaluated on the district observation rubric), frequency of feedback, adequacy of feedback, degree of autonomy and encouragement, frequency of collaborative coaching, and assistance with the job search. Where we could not construct reliable measures for both CTs and PSTs, we used individual survey items in analyses. See Table 5 for details about measures.

Analytic Method

To estimate PSTs' perceptions of preparedness to teach as a function of CTs' background characteristics and qualifications and PSTs' and CTs' perceptions of modeling and coaching, we used 2-level hierarchical linear models with PSTs at Level 1 and TEP at level 2. We use this nested structure because we assume that the kinds of preparation of PSTs enrolled in the same TEP experience will not be independent; in addition, we assume that there is likely sorting of certain kinds of PSTs into the same TEPs. The general form of the model is summarized in Equation 1:

$$Y_{\text{post},\,ij} = \gamma_{00} + \gamma_{10} X_{ij} + \gamma_{20} Y_{pre,\,ij} + \boldsymbol{\gamma}\mathbf{Z} + u_{0j} + r_{ij}, \qquad (1)$$

where the post-student teaching perception of preparedness to teach Y_{post} of PST i in program j is a function of an intercept (γ_{00}), focal predictor X_{ij} (measures of CTs' background characteristics/qualifications, CTs' selection/training, or PSTs'/CTs' perceptions of modeling/coaching), her pre-student teaching report Y_{pre}, a program random effect u_{0j}, and a PST-level residual, r_{ij}. As we are interested specifically in the contributions of features of student teaching (and especially mentoring) to PSTs' instructional readiness, adjusting for pre-scores is essential; otherwise, observed relationships could be explained by preparation that occurred prior to student teaching.

We enter focal predictors (X_{ij}) independently in separate regression models.[16] In a second model specification, we also control for **Z**, a vector of characteristics of the PST, her TEP, and the characteristics of her placement school. Covariates included PST characteristics (race/ethnicity, gender, prior teaching experience, undergraduate GPA, whether a parent, whether above 25 years of age during student teaching, and whether a CPS graduate), TEP characteristics (number of methods courses taken before student teaching, total hours of student teaching, whether primarily lead teacher during student teaching, PST-perceived alignment between coursework and field work, and whom PST perceived chose the placement school—for example, the TEP, the PST herself), and placement school characteristics (school proportion gender, race, free lunch, special education, prior achievement, and grade levels). As a sensitivity check, in separate models we used difference scores ($Y_{\text{post}} - Y_{\text{pre}}$) as the dependent variable, thus omitting Y_{pre} on the right-hand side of the equation; results were similar so, for brevity, we report only on estimates from Equation 1.

Our main analyses revealed that PST perceptions of the coaching they received were predictive of how well prepared they felt but CT perceptions of the coaching they provided were not. This led us to want to examine how PST and CT perceptions of coaching differed. To do this, we converted ordinal survey items on both surveys about coaching into binary items (see Table 5 for summary of response options for each item and Table 9 for the cut point we chose for converting to binary items). Because the assumption of equal distance between categories does not hold for ordinal data, we felt it inappropriate to calculate mean scores for these ordinal measures. Thus, we converted all to binary measures instead and compared PST and CT response distributions using chi-square analyses.

Results

In this section, we investigate whether, and in what ways, CTs as models of exemplary teaching and CTs as coaches predicted PSTs' self-perceived preparedness to teach.[17] First, we examine the degree to which CTs' qualifications and instructional effectiveness, which we use as proxies for CTs capacity to model effective instruction, are related to PSTs' perceptions of preparedness. Next, we explore the kinds of coaching that CTs reported providing and that PSTs reported receiving, and test whether either are associated with PSTs' feelings of preparedness.

Do PSTs Feel Better Prepared When Their CTs Model Effective Instruction?

Our proxies for the degree to which CTs serve as models of effective instruction included CPS REACH teacher evaluation measures (observation ratings and VAM scores), professional qualifications (e.g., National Board Certification), and a Rasch measure based on PST survey items about the degree to which PSTs thought their CTs modeled effective instructional domains (as aligned with observation categories in REACH) plus urban teaching. The results, summarized in Table 6, suggest that PSTs' feelings of preparedness were mostly unrelated to our proxies for the quality of instruction modeled by CTs, with a few notable exceptions.

In terms of CTs' observation ratings, we investigated both overall (aggregate) scores and domain scores. Across outcome measures (PSTs' feelings of preparedness in different domains), coefficients for CTs' observation ratings trended positive (except planning and preparation) but were mostly nonsignificant. Only in the case of PSTs' feelings of preparedness for classroom environment were CTs' observation ratings significant predictors.[18] Specifically, PSTs felt better

Table 6. Estimating PSTs' Feelings of Preparedness to Teach as a Function of CT as Model of Effective Instruction.

	Planning and preparation		Instruction		Environment		Professional responsibility		Urban teaching		Common core	
District measures of instructional effectiveness												
Observation ratings—Overall	0.02 (0.12)	0.14 (0.13)	0.123 (0.12)	0.18 (0.13)	0.26* (0.11)	0.29* (0.13)	0.00 (0.11)	0.16 (0.12)	−0.00 (0.12)	0.12 (0.13)	0.05 (0.11)	0.09 (0.13)
Observation ratings—Planning and preparation	−0.04 (0.10)	−0.0 (0.11)	−0.00 (0.10)	0.00 (0.11)	0.12 (0.10)	0.17 (0.10)	−0.12 (0.09)	−0.00 (0.10)	−0.08 (0.10)	−0.02 (0.11)	−0.03 (0.09)	0.02 (0.11)
Observation ratings—Instruction	0.05 (0.12)	0.16 (0.14)	0.18 (0.11)	0.26 (0.13)	0.30** (0.11)	0.35** (0.13)	0.01 (0.11)	0.16 (0.12)	−0.01 (0.11)	0.14 (0.13)	0.10 (0.11)	0.13 (0.13)
Observation ratings—Environment	0.02 (0.12)	0.15 (0.13)	0.13 (0.11)	0.18 (0.13)	0.24* (0.11)	0.27* (0.12)	0.05 (0.11)	0.17 (0.12)	0.01 (0.11)	0.10 (0.13)	0.03 (0.11)	0.00 (0.12)
Observation ratings—Professional responsibility	0.02 (0.10)	0.11 (0.11)	0.07 (0.10)	0.08 (0.11)	0.10 (0.10)	0.07 (0.11)	−0.07 (0.09)	0.03 (0.10)	0.02 (0.10)	0.11 (0.11)	−0.02 (0.10)	0.04 (0.11)
Value-added reading (subset only)	−0.02 (0.11)	0.07 (0.12)	−0.18 (0.12)	−0.19 (0.14)	−0.21 (0.11)	−0.17 (0.12)	0.03 (0.10)	−0.13 (0.10)	−0.07 (0.10)	−0.09 (0.12)	−0.02 (0.09)	−0.10 (0.09)
Value-added math (subset only)	0.02 (0.07)	0.02 (0.06)	0.05 (0.08)	0.04 (0.08)	−0.07 (0.08)	−0.12 (0.08)	0.04 (0.08)	0.01 (0.08)	−0.02 (0.07)	−0.04 (0.08)	0.03 (0.07)	−0.04 (0.06)
CTs' professional qualifications												
Postbaccalaureate degree (MA, Doc.)	−0.05 (0.09)	−0.01 (0.09)	−0.10 (0.08)	−0.12 (0.09)	−0.10 (0.08)	−0.12 (0.09)	−0.13 (0.08)	0.14 (0.08)	−0.03 (0.08)	−0.05 (0.09)	0.01 (0.08)	−0.06 (0.09)
Years of service	0.00 (0.01)	0.01 (0.01)	0.00 (0.01)	0.00 (0.01)	−0.01 (0.01)	−0.00 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.00 (0.01)	−0.00 (0.01)	0.00 (0.01)	0.01 (0.01)
Tenure	0.07 (0.13)	0.17 (0.14)	−0.03 (0.12)	0.10 (0.13)	−0.08 (0.12)	0.02 (0.13)	−0.12 (0.12)	−0.09 (0.13)	0.04 (0.12)	0.02 (0.13)	0.13 (0.11)	0.24 (0.13)
National Board Certification	0.16 (0.10)	0.18 (0.11)	−0.02 (0.10)	0.02 (0.11)	−0.07 (0.09)	−0.03 (0.10)	0.11 (0.10)	0.19 (0.10)	0.11 (0.10)	0.17 (0.11)	−0.03 (0.09)	0.02 (0.10)
PSTs' perception of CT instructional effectiveness												
Rasch measures: Domain-specific effectiveness	0.23*** (0.04)	0.22*** (0.04)	0.24*** (0.03)	0.22*** (0.04)	0.22*** (0.03)	0.18*** (0.04)	0.19*** (0.03)	0.20*** (0.04)	0.21*** (0.03)	0.19*** (0.04)	0.11** (0.03)	0.08 (0.04)

Note. Rasch postsurvey outcome measures for feelings of preparedness were estimated as a function of Rasch presurvey measures for each outcome, with predictors entered independently in the initial models, and then controlling for covariates in the second models. Each coefficient comes from a different regression model. Covariates included PST characteristics (race/ethnicity, gender, prior teaching experience, undergraduate GPA, whether a parent, whether above 25 years of age during student teaching, and whether a CPS graduate), TEP characteristics (number of methods courses taken before student teaching, total hours of student teaching, whether primarily lead teacher during student teaching, PST-perceived alignment between coursework and field work, and whom PST perceived chose the placement school—for example, the TEP, the PST herself), and placement school characteristics (school proportion gender, race, free lunch, special education, prior achievement, and grade levels). For estimates based on observation scores, we constrained the sample to PSTs whose CTs had complete observation data ($n = 426$); given that many CTs teach in untested grades and subjects, VAM information is available for only $n = 147$ CTs. Otherwise, this table is based on our full analytic sample ($n = 583$). PST = preservice teacher candidates; CT = cooperating teachers; GPA = grade point average; CPS = Chicago Public School; TEP = teacher education program; VAM = value-added to student achievement measures.
*$p < .05$. **$p < .01$. ***$p < .001$.

prepared for classroom environment when their CTs received stronger observation ratings overall, in instruction, and in classroom environment. We also found that the more favorably PSTs perceived the instruction modeled by their CTs, the better prepared they felt to take on the responsibilities of teaching themselves (bottom of Table 6). PSTs' perceptions of preparedness were unrelated to other proxies for their CTs' instructional effectiveness as signaled by VAMs,[19] years of experience, postbaccalaureate degrees, tenure, or National Board Certification.

Coaching (CT perspective): Do the Kinds of Coaching That CTs Report Providing Predict PSTs' Perceptions of Preparedness to Teach?

We expected that CTs' perceptions of the kinds and quality of mentoring they provided PSTs would be related to how prepared PSTs felt. However, as summarized in Table 7, this was generally not the case. If we constrain our focus specifically to coaching measures that were significant predictors across model specifications, we found no evidence that domain-specific instructional support, frequency of feedback, or collaborative coaching that CTs reported providing predicted how prepared PSTs felt to take on their own classrooms.

CTs' perception of the Adequacy of Feedback and Autonomy and Encouragement they provided were also mostly unrelated to PSTs' feelings of preparedness, with a few exceptions. Namely, PSTs felt more prepared for Planning and Preparation when CTs evaluated their own feedback as helpful. Regarding Autonomy and Encouragement, PSTs felt better prepared for Environment when CTs reported being available to them when they struggled with teaching. PSTs also felt better prepared for Professional Responsibilities when CTs reported making their PSTs feel comfortable taking instructional risks. Unexpectedly, we found some evidence that PSTs felt less prepared in Instruction the more that CTs reported allowing PSTs to make their own instructional decisions. One possible explanation is that some CTs may have turned over teaching responsibilities to PSTs too often or too soon, without offering adequate support.

Coaching (PST Perspective): Do the Kinds of Coaching That PSTs Report Receiving Predict PSTs' Perceptions of Preparedness to Teach?

Although CTs' reports about the coaching they provided PSTs were mostly unrelated to PSTs' self-perceived preparedness, PSTs' reports of the coaching they received were consistently positively and significantly predictive (see Table 8). The more positively that PSTs perceived their CTs' coaching practices—in terms of Domain-Specific Instructional Support, Frequency and Adequacy of Feedback, Autonomy and Encouragement, Collaborative Coaching, and Job Assistance—the better prepared they felt to teach across instructional domains.

Given that we found PSTs' feelings of preparedness to be generally related to their own perceptions of the kinds/quality of coaching they received but not to CTs' perceptions of the kinds/quality of coaching they felt they provided, we decided to investigate the matter further. Specifically, we investigated whether there was agreement between how PSTs and CTs perceived the kinds/quality of coaching present during student teaching. Table 9 summarizes parallel measures of coaching from the PST and CT surveys, as well comparisons (chi-square) between distributions in terms of the proportion of respondents rating coaching in the highest categories (typically the top two out of four response options). Overall, the results suggest that both CTs and PSTs have quite favorable ratings of the quality and amount of coaching they perceived, though CTs tended to have significantly more favorable ratings. We elaborate below.

Over 95% of CTs considered the mentoring they provided to their PSTs to be effective or very effective (the top two out of four response options) in all domains except planning and preparation—which was still high at 90%. While 95% or more CTs said they gave feedback about concrete suggestions, general observations, and areas of strengths "often" or "all the time," relatively fewer CTs reported posing reflective questions (88%) or giving feedback on areas for improvement (81%). Virtually all CTs perceived their feedback to be helpful (99%) and frequent enough (97%). They also reported providing PSTs extremely high levels of autonomy and encouragement (98%-99%). In terms of frequency, most CTs reported that at least once a week, they codesigned (84%) and co-taught (72%) lessons with their PSTs, reviewed student work together (86%), or asked PSTs to observe their own teaching (75%). Of job-search related mentoring, CTs felt they most frequently provided advice about types of jobs to pursue (61%), while assistance with resume development (29%) and interview preparation (30%) occurred much less often.

Like CTs, PSTs also found the coaching they received to be both frequent and strong (Table 9). Of particular interest, however, is that their evaluations tended to be slightly less favorable than the self-evaluations offered by CTs about their own coaching practices. In terms of Domain-Specific Instructional Support, PSTs generally perceived the mentoring conversations they had with their CTs less favorably than CTs, with significant differences in four domains: urban or culturally responsive teaching, professional responsibilities, classroom environment, and delivering instruction. PSTs reported receiving the most instructional support from their CTs in the area of instructional delivery, and least in urban or culturally responsive teaching. PSTs felt they received less frequent feedback than their CTs reported giving. PSTs and CTs also disagreed somewhat about which forms of feedback occurred most and least frequently. Interestingly, PSTs and CTs agreed that referring to areas for improvement and posing reflective questions were the least common form of feedback. In the area of Autonomy and Encouragement, only 87%

Table 7. Estimating PSTs' Feelings of Preparedness to Teach as a Function of CTs' Perceptions of Coaching Provided.

	Planning and preparation		Instruction		Environment		Professional responsibility		Urban teaching		Common core	
Domain-specific instructional support												
Rasch measures: Domain-specific instructional support	0.08 (0.05)	0.04 (0.05)	0.01 (0.05)	0.00(0.05)	0.06 (0.04)	0.03 (0.05)	0.01 (0.04)	−0.03 (0.05)	−0.06 (0.04)	−0.08 (0.05)	−0.00 (0.04)	−0.03 (0.05)
Frequency of feedback												
Rasch measures: Frequency of feedback	0.01 (0.04)	−0.01 (0.05)	−0.03 (0.04)	−0.02 (0.04)	0.03 (0.04)	0.02 (0.04)	0.04 (0.04)	0.01 (0.04)	−0.02 (0.04)	0.00 (0.05)	−0.03 (0.04)	−0.02 (0.04)
Adequacy of feedback												
Frequent enough feedback	−0.02 (0.08)	0.03 (0.09)	−0.08 (0.08)	−0.04 (0.09)	0.02 (0.08)	0.01 (0.09)	0.07 (0.08)	0.01 (0.09)	−0.04 (0.08)	−0.06 (0.09)	−0.13 (0.08)	−0.17 (0.09)
Helpful feedback for learning to teach	0.21* (0.09)	0.30** (0.10)	0.02 (0.09)	0.11 (0.10)	0.13 (0.08)	0.13 (0.10)	0.10 (0.08)	0.04 (0.09)	0.01 (0.09)	0.01 (0.10)	0.05 (0.08)	0.04 (0.10)
Consistent with field instructor's feedback	0.04 (0.07)	−0.01 (0.08)	0.07 (0.07)	0.06 (0.07)	0.12 (0.06)	0.06 (0.07)	0.15* (0.07)	0.02 (0.07)	0.03 (0.07)	−0.07 (0.08)	0.06 (0.07)	0.00 (0.08)
Autonomy and encouragement												
CT available when PST struggled with teaching	0.10 (0.08)	0.05 (0.09)	0.05 (0.08)	0.02 (0.09)	0.19* (0.08)	0.18* (0.09)	0.17* (0.08)	0.13 (0.08)	0.05 (0.08)	0.04 (0.09)	−0.12 (0.08)	−0.19* (0.09)
CT's expectations reasonable	0.14 (0.08)	0.18* (0.09)	−0.02 (0.08)	−0.02 (0.09)	0.04 (0.08)	0.03 (0.08)	0.11 (0.07)	0.05 (0.08)	−0.00 (0.08)	−0.00 (0.09)	−0.10 (0.08)	−0.12 (0.09)
CT let PST make own instructional decisions	−0.08 (0.08)	−0.07 (0.08)	−0.17* (0.08)	−0.16* (0.08)	−0.08 (0.07)	−0.13 (0.08)	0.07 (0.07)	0.03 (0.08)	−0.02 (0.08)	−0.04 (0.08)	−0.13 (0.07)	−0.09 (0.08)
PST felt comfortable taking instructional risks	0.06 (0.09)	0.01 (0.09)	−0.04 (0.09)	−0.08 (0.09)	0.09 (0.08)	0.00 (0.09)	0.22** (0.08)	0.18* (0.09)	0.01 (0.09)	−0.06 (0.09)	−0.07 (0.08)	−0.14 (0.09)
Collaborative coaching												
CT asked PST to observe CT's teaching	−0.00 (0.03)	−0.01 (0.03)	−0.02 (0.03)	−0.04 (0.03)	0.04 (0.03)	0.04 (0.03)	−0.01 (0.03)	−0.02 (0.03)	−0.02 (0.03)	−0.03 (0.03)	0.04 (0.03)	0.01 (0.03)
Codesigned lessons	0.04 (0.03)	0.04 (0.03)	0.02 (0.03)	−0.00 (0.03)	0.04 (0.03)	0.04 (0.03)	0.02 (0.03)	−0.00 (0.03)	−0.03 (0.03)	−0.02 (0.03)	−0.00 (0.03)	−0.04 (0.03)
Co-taught lessons	0.03 (0.03)	0.03 (0.03)	0.01 (0.03)	−0.01 (0.03)	0.05 (0.03)	0.04 (0.03)	0.03 (0.03)	0.00 (0.03)	−0.01 (0.03)	−0.01 (0.03)	0.03 (0.03)	−0.01 (0.03)
CT gave feedback on PST's teaching	0.05 (0.05)	0.04 (0.05)	−0.00 (0.05)	−0.02 (0.05)	0.05 (0.04)	0.01 (0.05)	0.05 (0.04)	−0.01 (0.05)	−0.03 (0.05)	−0.05 (0.05)	−0.07 (0.05)	−0.07 (0.05)
CT urged PST to practice specific elements	0.04 (0.04)	0.06 (0.04)	0.02 (0.04)	0.01 (0.04)	0.03 (0.04)	0.03 (0.04)	−0.01 (0.04)	−0.03 (0.04)	−0.03 (0.04)	−0.02 (0.04)	−0.01 (0.04)	−0.02 (0.04)
Analyzed student work together	0.06 (0.04)	0.06 (0.04)	0.00 (0.03)	−0.02 (0.04)	0.03 (0.03)	−0.00 (0.04)	−0.01 (0.03)	−0.06 (0.04)	−0.03 (0.04)	−0.04 (0.04)	−0.03 (0.03)	−0.08* (0.04)
Shared data/evidence after observing teaching	0.03 (0.03)	0.05 (0.03)	−0.02 (0.03)	−0.03 (0.03)	0.02 (0.03)	0.02 (0.03)	0.00 (0.03)	−0.04 (0.03)	−0.04 (0.03)	−0.04 (0.03)	−0.02 (0.03)	−0.05 (0.03)
Job assistance												
Rasch measures: Job assistance	0.02 (0.04)	0.05 (0.04)	0.06 (0.04)	0.10** (0.04)	−0.00 (0.04)	0.03 (0.04)	0.03 (0.05)	0.03 (0.04)	0.02 (0.04)	0.05 (0.04)	−0.01 (0.05)	−0.03 (0.04)

Note. See Table 6 note for details. PST = preservice teacher candidates; CT = cooperating teachers.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 8. Estimating PSTs' Feelings of Preparedness to Teach as a Function of PSTs' Perceptions of the Coaching Received.

	Planning and preparation		Instruction		Environment		Professional responsibility		Urban teaching		Common core	
Domain-specific instructional support												
Rasch measures: Domain-specific instructional support	0.25*** (0.04)	0.22*** (0.04)	0.24*** (0.03)	0.20*** (0.04)	0.21*** (0.03)	0.15*** (0.04)	0.22*** (0.03)	0.22*** (0.04)	0.21*** (0.03)	0.18*** (0.04)	0.12*** (0.03)	0.07 (0.04)
Frequency of feedback												
Rasch measures: Frequency of Feedback	0.20*** (0.04)	0.18*** (0.04)	0.22*** (0.03)	0.21*** (0.04)	0.16*** (0.03)	0.16*** (0.04)	0.19*** (0.03)	0.18*** (0.04)	0.17*** (0.03)	0.17*** (0.04)	0.06 (0.03)	0.05 (0.04)
Adequacy of feedback												
CT observed PST teach frequently enough	0.41*** (0.04)	0.19** (0.06)	0.07*** (0.02)	0.19*** (0.06)	0.06*** (0.01)	0.18** (0.06)	0.04** (0.02)	0.17** (0.05)	0.06*** (0.02)	0.11* (0.06)	0.05*** (0.01)	0.02 (0.06)
CT provided feedback frequently enough	0.22*** (0.05)	0.22*** (0.05)	0.26*** (0.04)	0.26*** (0.05)	0.21*** (0.04)	0.19*** (0.05)	0.27*** (0.04)	0.26*** (0.05)	0.19*** (0.04)	0.18*** (0.05)	0.12** (0.04)	0.10* (0.05)
CT's feedback helped PST learn to teach	0.27*** (0.05)	0.24*** (0.06)	0.32*** (0.05)	0.31*** (0.06)	0.26*** (0.05)	0.21*** (0.06)	0.28*** (0.05)	0.29*** (0.05)	0.26*** (0.05)	0.27*** (0.06)	0.17*** (0.05)	0.14* (0.06)
CT's feedback aligned with field instructor's	0.25*** (0.05)	0.24*** (0.05)	0.32*** (0.04)	0.34*** (0.05)	0.29*** (0.04)	0.26*** (0.05)	0.26*** (0.04)	0.28*** (0.05)	0.19*** (0.04)	0.20*** (0.05)	0.17*** (0.04)	0.16** (0.05)
Autonomy and encouragement												
CT available when PST struggled with teaching	0.34*** (0.06)	0.30*** (0.06)	0.37*** (0.05)	0.31*** (0.06)	0.32*** (0.05)	0.25*** (0.06)	0.30*** (0.05)	0.29*** (0.06)	0.22*** (0.05)	0.19** (0.06)	0.17*** (0.05)	0.10 (0.06)
CT's expectations reasonable	0.34*** (0.05)	0.28*** (0.06)	0.35*** (0.05)	0.31*** (0.06)	0.35*** (0.05)	0.31*** (0.06)	0.25*** (0.05)	0.26*** (0.05)	0.22*** (0.05)	0.19*** (0.06)	0.17*** (0.05)	0.09 (0.06)
CT let PST make own instructional decisions	0.35*** (0.05)	0.32*** (0.06)	0.33*** (0.05)	0.32*** (0.06)	0.30*** (0.05)	0.26*** (0.06)	0.31*** (0.05)	0.28*** (0.06)	0.21*** (0.05)	0.17** (0.06)	0.15** (0.05)	0.12* (0.06)
PST felt comfortable taking instructional risks	0.30*** (0.04)	0.26*** (0.05)	0.30*** (0.04)	0.25*** (0.05)	0.24*** (0.04)	0.19*** (0.05)	0.24*** (0.04)	0.21*** (0.05)	0.18*** (0.04)	0.14** (0.05)	0.15*** (0.04)	0.10* (0.05)
Collaborative coaching												
CT asked PST to observe aspect of CT's teaching	0.03 (0.02)	0.03 (0.02)	0.07*** (0.02)	0.06** (0.02)	0.06*** (0.01)	0.05** (0.02)	0.04** (0.02)	0.04* (0.02)	0.06*** (0.02)	0.04* (0.02)	0.05*** (0.01)	0.05** (0.02)
Codesigned lessons	0.05** (0.02)	0.05** (0.02)	0.07*** (0.02)	0.07*** (0.02)	0.08*** (0.02)	0.08*** (0.02)	0.09*** (0.02)	0.11*** (0.02)	0.08*** (0.02)	0.08*** (0.02)	0.05** (0.02)	0.05* (0.02)
Co-taught lessons	0.01 (0.02)	0.02 (0.02)	0.04** (0.02)	0.04* (0.02)	0.04** (0.02)	0.03 (0.02)	0.04* (0.02)	0.06** (0.02)	0.04* (0.02)	0.05* (0.02)	0.04* (0.02)	0.03 (0.02)
CT gave feedback on PST's teaching	0.09*** (0.02)	0.07** (0.03)	0.10*** (0.02)	0.09*** (0.03)	0.10*** (0.02)	0.08*** (0.02)	0.12*** (0.02)	0.11*** (0.02)	0.11*** (0.02)	0.09*** (0.03)	0.05* (0.02)	0.04 (0.03)
CT urged PST to practice specific elements	0.06** (0.02)	0.07** (0.02)	0.09*** (0.02)	0.10*** (0.02)	0.07*** (0.02)	0.06** (0.02)	0.08*** (0.02)	0.08*** (0.02)	0.08*** (0.02)	0.08*** (0.02)	0.06** (0.02)	0.05* (0.02)
Analyzed student work together	0.04* (0.02)	0.04 (0.02)	0.08*** (0.02)	0.06** (0.02)	0.06*** (0.02)	0.04* (0.02)	0.06*** (0.02)	0.06** (0.02)	0.07*** (0.02)	0.08*** (0.02)	0.04** (0.02)	0.02 (0.02)
Shared data/evidence after observations	0.06*** (0.02)	0.04* (0.02)	0.09*** (0.02)	0.07*** (0.02)	0.07*** (0.02)	0.06** (0.02)	0.08*** (0.02)	0.08*** (0.02)	0.08*** (0.02)	0.07*** (0.02)	0.04* (0.02)	0.03 (0.02)
Job assistance												
Rasch measure: Job assistance	0.13*** (0.04)	0.12** (0.04)	0.17*** (0.03)	0.13*** (0.04)	0.15*** (0.03)	0.11** (0.04)	0.19*** (0.03)	0.17*** (0.04)	0.17*** (0.03)	0.16*** (0.04)	0.08* (0.03)	0.06 (0.04)

Note. See Table 6 note for details. PST = preservice teacher candidates; CT = cooperating teachers.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 9. Comparing CTs' With PSTs' Perceptions of CTs' Coaching Practices.

	% PSTs	% CTs	$\chi 2$
Domain-specific instructional support			
PST: Learned in conversation with CT		*Fair amount/great deal*	
CT: CT's effectiveness in mentoring		*Effective/very effective*	
Urban or culturally responsive teaching	81.48	95.88	37.90***
Professional responsibilities	85.23	97.26	27.12***
Classroom environment	90.68	97.00	14.89***
Delivering instruction	93.24	96.20	5.28*
Planning and preparation	87.14	90.08	2.05
Frequency of feedback		*Often/all the time*	
CT referred to areas of strength	73.60	96.63	68.37***
CT posed reflective questions	62.92	88.48	58.34***
CT gave concrete suggestions	80.62	96.35	46.43***
CT offered general observations	81.46	95.22	32.96***
CT referred to areas for improvement	70.22	81.18	10.88**
Adequacy of feedback		*Agree/strongly agree*	
CT gave frequent enough feedback	83.76	97.44	34.44***
CT gave helpful feedback	90.54	99.14	20.79***
CT's feedback consistent with field instructor	87.08	92.62	7.09**
Autonomy and encouragement		*Agree/strongly agree*	
CT's expectations appropriate for PST as novice	92.90	98.30	13.36***
PST could go to CT for help if struggling	95.74	98.01	5.67*
CT let PST make own instructional decisions	94.62	98.02	9.22**
PST comfortable taking instructional risks	86.65	99.15	43.34***
Collaborative coaching		*Once a week or more*	
Ask PST to observe CT teaching	47.79	74.52	71.01***
Co-teach lessons with PST	46.73	72.09	50.16***
Codesign lessons with PST	57.88	84.24	49.84***
Analyze student work with PST	63.89	86.22	41.28***
Review data/evidence about PST's lessons	63.19	77.84	35.84***
Encourage PST to practice specific aspects	73.45	88.65	21.07***
Job assistance		*Sometimes/often*	
CT discussed jobs at placement school	61.13	43.94	28.04***
CT gave advice on jobs to apply for	77.46	61.41	24.90***
CT helped PST prepare for interview	42.82	29.58	16.43***
CT discussed openings elsewhere	49.01	37.75	13.26***
CT provided help with PST's resume	40.11	28.53	12.85***

Note. Except for the Collaborative Coaching items, the percentages summarized in the first two columns represent the percentages of PSTs and CTs who selected the top two out of four response options on parallel survey questions that were included on both PST and CT surveys. The percentages listed for the Collaborative Coaching items represent the percentage of individuals who responded to the top three (*once a week or more*) of seven (*never* to *daily*) response categories. We then compare the PST and CT response distributions (from the first two columns) using chi-square analyses, where chi-square values are listed in Column 3 and *p* values in Column 4. PST = preservice teacher candidates; CT = cooperating teachers.
*$p < .05$. **$p < .01$. ***$p < .001$.

of PSTs agreed or strongly agreed that they felt comfortable taking instructional risks. There was also notable disagreement between PSTs and CTs in how frequently they thought Collaborative Coaching activities occurred. Although PSTs reported less frequent coaching than CTs in most areas, the reverse was true in terms of Job Assistance.

Discussion and Implications

As the role of CT continues to gain prominence as a key feature of teacher preparation, so do the calls for more research about the kinds of mentoring provided by CTs to their PSTs during student teaching and with what effects. In this study, we take a districtwide look at the type of mentoring CTs provide through the lenses of being an exemplary model of instruction for PK-12 students and being a coach who is intentionally targeting the growth and ongoing development of the PST. In doing so, we begin to advance measurable conceptions of two key roles of a CT—as a model of effective teaching and a coach who is attending to the growth and development of their PST. In the end, we find evidence that aspects of both roles contribute positively to PSTs

feelings of preparedness to teach at the end of their preparation.

Most surprising, perhaps, in our findings, is that frequently called upon qualifications such as CTs' tenure, years of teaching experience, National Board Certification, and degree status, as well as VAM scores, were unrelated to PSTs' feelings of preparedness. These findings are in stark contrast to most current policies being advocated for CT selection. That said, observation-based, more direct measures (PSTs' perceptions of CTs' instructional effectiveness and CT observation ratings) were associated with PSTs' perceptions of readiness. To our knowledge, this is the first direct evidence suggesting that PSTs feel better prepared when their CTs are rated as exemplary instructors using observational data. Fortunately for preparation programs in CPS, it appears that—despite variation in how they recruit CTs—the teachers they selected to serve as CTs had significantly stronger observation ratings than other teachers in the district (by more than half a standard deviation—see Table A5 for details). Compared with non-CTs, CTs also had significantly higher rates of tenure and National Board Certification and stronger reading value-added scores.

As with the CT as model analyses, we find that whether or not CT coaching predicts PSTs' perceptions of preparedness depended upon the measure used. Rather than varying based on a given facet of coaching, what mattered most seemed to be whose perspective was represented; specifically, PSTs' feelings of preparedness were positively related to their own perceptions of the coaching they received but were mostly unrelated to CTs' perceptions of the coaching they reported providing. PSTs felt better prepared across instructional domains when they reported that their CTs provided stronger domain-specific instructional support, more frequent and adequate feedback, higher levels of autonomy and encouragement, stronger collaborative coaching, and better job assistance. On the contrary, CTs' self-perceptions of many of these same facets of coaching were mostly unrelated to PSTs' feelings of preparedness.

There are several possible explanations for these discrepant findings. First, regardless of the quality of coaching that a CT feels she provides, PSTs' subjective experiences of that mentoring is likely what ultimately matters, especially when the outcome is also subjective (self-reported). Related, it is possible that CTs' perspectives are not predictive of PSTs' readiness to teach because CTs are less able or less willing to discriminate the quality of their own coaching practice. The fact that we find CTs to overestimate the quality and frequency of coaching when compared PSTs' perspectives seems to support this point; though it is important to underscore that both PSTs and CTs felt the quality of coaching provided by CTs, on average, to be quite strong. Related, given that CTs tended to rate the coaching they provided so favorably (see Table 9), there may not have been enough variation in the CT coaching measures to be able to detect a relationship with PSTs' feelings of preparedness. Finally, rather than better mentoring causing teachers to be better prepared, it is possible that feeling better prepared causes PSTs to evaluate their CTs more favorably. In other words, PSTs' positive feelings of preparedness may be driving their positive perceptions of mentorship and preparation quality rather than the other way around.

An important limitation of our study is that the outcome measure—perceptions of preparedness to teach—is self-reported and represents the perspective of PSTs and not CTs or other outside evaluators. We are not aware of any existing published literature that has demonstrated, for example, that PSTs who feel better prepared are actually more instructionally effective as teacher of record as measured by outside evaluators or student achievement gains. Even where PSTs feel prepared, CTs or outside observers may feel otherwise. Thus, the fact that coaching and modeling measures based upon PSTs' perceptions tended to be the strongest predictors of their own feelings of preparedness raises some concern that these results may be endogenous or reflect survey response biases. In future work, we will use other outcome measures that are not self-reported, including PSTs' teacher evaluation scores, as measured by REACH observational and VAM scores, *after* they have completed their preparation and become teachers of record, to test whether or not results are similar. Another limitation of this study is that White CTs, White PSTs, and female PSTs were overrepresented in our analytic sample, calling into question whether results from these analyses are generalizable to full population of CTs and PSTs in the district.

Assuming for now our results represent true effects, a central implication is that efforts to recruit CTs who can model effective teaching and who are effective coaches both have some merit. However, individuals who are responsible for recruiting CTs should be discriminating about the criteria they use. When identifying CTs who can serve as effective models, they should consider more direct, observation-based measures of CTs' instructional quality as opposed to professional qualifications or VAM scores alone. When identifying effective coaches, they should consider PSTs' evaluations more than CTs' self-evaluations. Aspects of both CT as model and coach matter.

Our work also has implications for state policies related to standards for teachers to serve as CTs. Typically, these policies focus on requirements related to CTs being models of effective instruction—for example, teachers must have a minimum number of years of teaching experience or minimum scores on state/district evaluation rubrics. While our results provide some evidence in support of these policies, they also suggest that policy makers consider setting minimum standards for how skilled teachers are in coaching other teachers.

This study advances two ways of conceptualizing mentoring in an effort to begin to name and measure the kind of work in which CTs engage regularly. We hope future research builds upon and refines these and other mentoring constructs to deepen our understanding about how best to enhance PST perceptions of preparedness for their own classrooms.

Appendix

Table A1. Comparing CT Samples.

	Full sample (n = 1,066)		Full sample (n = 1,066)		Analytic sample (n = 583)	
	% CTs not in analytic sample (n = 483)	% CTs in analytic sample (n = 583)	% of CTs who responded to at least one survey (n = 787)	% of CTs who did not respond to a survey (n = 279)	% of CTs who responded to at least one survey (n = 390)	% of CTs who did not respond to a survey (n = 193)
Male	24.1	21.2	22.0	25.0	21.1	22.6
White	61	66.6*	63.8	64.5	66.3	67.9
African American	9.2	9	9.1	9.0	8.9	8.8
Hispanic	20.6	16.8	17.9	21.5	15.9	19.0
Asian	5.3	4.2	5.2	3.0	4.4	2.9
Other/undisclosed	3.9	3.4	4.1	2.0	4.4	1.5
Years of service as CPS educator	12.0	11.7	11.7	12.1	11.6	11.8
Tenure	90	90	90.3	88.9	90.8	89.1
National Board Certification	15.3	16.6	17.3	11.1*	16.5	18.2

Note. This table compares background characteristics of CTs in different samples. In the left two columns, we compare CTs in the analytic sample to all other CTs. We also compared CTs who responded to at least one survey to all other CTs (middle two columns). Of the 1,066 CTs in our full sample, 583 were in the analytic sample. Of the 1,066 CTs in our full sample, 787 CTs responded to at least one survey. In the analytic sample of 583 CTs, 390 CTs responded to at least one survey. CT = cooperating teachers; CPS = Chicago Public School.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table A2. Comparing PSTs in Analytic Sample to PSTs not in Analytic Sample.

	PSTs in analytic sample		PSTs not in analytic sample		
	M (%)	n	M (%)	n	t statistic
Male	22.3	563	31.9	464	−3.517***
White	62.6	583	50.6	539	4.067***
African American	7.9	583	8.0	539	−0.054
Hispanic	15.4	583	17.1	539	−0.740
Asian/Pacific Islander	7.2	583	5.4	539	1.253
Other/undisclosed	8.7	583	20.0	539	5.485***
Undergraduate GPA	90.3	562	89.3	470	1.922

Note. PSTs in the analytic sample responded to at least one pre- and post-survey, while PSTs not in the analytic sample responded to either exactly one survey or no surveys. PST = preservice teacher; GPA = grade point average.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table A3. Analytic Sample of Placement Schools.

Placement school characteristics	Placement schools (n)	Placement school mean (%)	Nonplacement schools (n)	All nonplacement schools mean (%)	All CPS schools (n)	All CPS schools mean (%)
Male	210	50.4	484	52.2	694	51.7
Latino	210	50.3	473	31.3	682	37.1
African American	210	26.4	483	62.5	692	51.7
White	210	14.8	320	7.0	518	10.3
Asian/Pacific Islander	210	6.2	229	2.5	401	4.7
Other race	210	1.9	374	1.2	570	1.5
Free/reduced lunch	210	79.6	486	90.4	696	87.0
Special education	210	15.4	486	18.9	696	18.6
Secondary school (Grades 9-12)	209	27.8	486	24.9	696	24.7
Primary school (grades K-8, K-5, 5-8, etc.)	209	72.2	486	70.2	696	70.4

Note. CPS = Chicago Public School.

Table A4. PSTs' Initial and Final Feelings of Preparedness Across Instructional Domains.

	Entry survey		Exit survey	
Domain	*n*	*M* (*SD*)	*n*	*M* (*SD*)
Classroom environment	563	3.48(4.67)	563	11.08(6.67)***
Instruction	556	4.72(4.54)	556	6.27(3.98)***
Common core	552	5.71(7.85)	552	7.83(7.05)***
Planning and preparation	563	3.48(4.67)	563	4.98(4.38)***
Urban teaching	552	3.71(4.98)	552	5.51(4.44)***
Professional responsibility	554	0.37(4.34)	554	3.93(3.80)***

Note. Rasch measure means reported are unstandardized logits. PST = preservice teacher.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table A5. Comparing CT Characteristics and Effectiveness to Other Teachers in CPS.

	Model 1	Model 2	Model 3	Model 4
	OLS	SFE	OLS	SFE
Observation ratings overall—Weighted (n = 14,692)	0.28*** (0.022)	0.16*** (0.015)	0.18*** (0.019)	0.12*** (0.014)
Reading VAM (n = 3,773)	0.17** (0.063)	0.22** (0.072)	0.14* (0.062)	0.16* (0.069)
Math VAM (n = 3,221)	0.13 (0.099)	0.094 (0.11)	0.064 (0.100)	0.0018 (0.12)
Years of service (n = 16,107)	−0.37 (0.34)	0.15 (0.33)	−1.12*** (0.30)	−0.83** (0.29)
Tenure (n = 17,743)—Odds ratios	3.50*** (0.60)	3.75*** (0.68)	2.49*** (0.42)	2.46*** (0.48)
National Board Certification (n = 17,752)—Odds ratios	2.63*** (0.36)	2.07*** (0.33)	1.80*** (0.25)	1.59** (0.25)
Masters (n = 18,047)—Odds ratios	1.46*** (0.15)	1.44*** (0.16)	1.19 (0.13)	1.13 (0.13)
SFEs		x		x
Teacher covariates: gender, race, years of service, degree/tenure/NBCT			x	x

Note. To compare CTs with other teachers in the district (non-CTs) in terms of background characteristics, qualifications, and measures of instructional effectiveness, we use the following general equation: $\text{Teacher Char}_{ts} = \beta_0 + \beta_1 \text{CT\_dum}_t + \beta_2 X_t + \phi_s + e_{ts}$ (Equation 2). In each model, we rotate through a series of teacher characteristics as dependent variables (e.g., REACH data including observation ratings and VAM) and use linear regression to estimate the characteristics of teacher t in school s (Teacher Char_{ts}) as a function of an intercept (β_0), an indicator for whether (1) or not (0) teacher is a CT (CT_dum), a vector of other teacher characteristics (X_t –teacher race, gender, years of service, advanced degree status, tenure, and National Board Certification), and an error term (e_{ts}). We report the coefficient on CT_dum (β_1), as it represents an estimate of the difference between CTs and non-CTs across outcomes. Because these are OLS regression models, we report them under column titles "OLS." To compare CTs to non-CTs within the same schools, in alternative specifications, we add SFEs (ϕ_s). The addition of SFEs helps us discern how much of the differences we observe between CTs and non-CTs are explained by differences between school; we report these alternative estimates under column titles "SFE." Across models, we cluster standard errors at the school level. When dependent variables are binary, we use logistic instead of linear regression. In alternative model specifications, we used two-level multilevel models with teachers (Level 1) nested in schools (Level 2). In these models, we include the same vector of teacher covariates (at Level 1) described above but also include a vector of school covariates at Level 2: % student race, % student gender, % free lunch status, % special education status, % average achievement, and school level (e.g., elementary, high). Results were similar and therefore not reported. CT = cooperating teachers; OLS = ordinary least square; SFE = school fixed effects; VAM = value-added to student achievement measures; CPS = Chicago Public School; NBCT = National Board Certified Teachers.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table A6. Rasch Measure Details.

Measure/item	Item-step difficulty range	Person-measure range	% extreme cases	Item reliability	Person reliability	Item difficulty	Item infit	Item outfit	Item point-measure correlation
Planning and preparation (PST)	−9.05, 10.17	−6.65, 10.75	11.5	0.99	0.90				
Planning lessons						−2.04	1.23	1.55	0.83
Designing student assessments						0.64	0.92	0.82	0.89
Selecting instructional outcomes						0.31	0.73	0.59	0.90
Using results from assessments to improve teaching						0.00	1.02	0.93	0.89
Anticipating student misconceptions about content when planning for class						1.09	1.08	1.07	0.87
Planning and preparation (CT)	−7.16,7.98	−7.62, 8.43	10.5	0.99	0.89				
Planning lessons						−1.29	0.94	0.97	0.85
Designing student assessments						0.22	0.89	0.86	0.88
Selecting instructional outcomes						−0.06	0.78	0.72	0.89
Using results from assessments to improve teaching						0.05	0.96	0.94	0.88
Anticipating student misconceptions about content when planning for class						1.08	1.31	1.34	0.83
Instruction (PST)	−9.65, 9.87	−8.86, 10.64	18.9	0.95	0.91				
Using developmentally appropriate instructional language						−0.17	1	0.93	0.87
Posing variety of questions to probe student understanding						−0.22	0.77	0.64	0.9
Facilitating discussions						−0.11	1.13	1.02	0.87
Maintaining student interest						0.38	0.77	0.66	0.9
Using variety of instructional methods						0.25	0.92	0.81	0.89
Adapting curricula to fit students' needs						0.75	1.09	1.04	0.87
Teaching subject matter						−0.88	1.26	1.34	0.84
Instruction (CT)	−6.59, 7.14	−7.38, 7.92	12.3	0.98	0.92				
Using developmentally appropriate instructional language						−0.44	1.08	1.06	0.84
Posing variety of questions to probe student understanding						0.47	0.82	0.8	0.88
Facilitating discussions						0.48	1.01	1	0.86
Maintaining student interest						0.27	0.93	0.91	0.87
Using variety of instructional methods						−0.15	0.95	0.92	0.87
Adapting curricula to fit students' needs						0.48	1.01	1	0.86
Teaching subject matter						−1.12	1.12	1.09	0.82
Teaching in urban schools (PST)	−9.47, 9.70	−10.11, 10.32	17.1	0.97	0.92				
Working with low-income students (PSTs only)						−1.35	1.24	1.47	0.85
Designing instruction to meet variety of student abilities (PSTs only)						−0.16	1.12	1.02	0.88
Responding to nonacademic challenges facing students						0.38	1.16	1.08	0.89
Using knowledge about urban schools and communities to inform work						0.31	0.91	0.8	0.91

(continued)

Table A6. (continued)

Measure/item	Item-step difficulty range	Person-measure range	% extreme cases	Item reliability	Person reliability	Item difficulty	Item infit	Item outfit	Item point-measure correlation
Planning culturally relevant teaching strategies						0.39	0.68	0.56	0.93
Using culturally relevant teaching strategies						0.43	0.72	0.6	0.92
Teaching in urban schools (CT)	−11.20, 11.62	−11.18, 11.61	19.1	0.84	0.88				
Responding to nonacademic challenges facing students						0.44	1.4	1.19	0.91
Using knowledge about urban schools and communities to inform work						−0.24	1.02	0.92	0.93
Planning culturally relevant teaching strategies						−0.2	0.76	0.61	0.95
Using culturally relevant teaching strategies						−0.01	0.72	0.51	0.95
Classroom environment (PST)	−14.46, 15.51	−12.48, 16.99	28.4	1	0.9				
Developing relationships with students						−5.58	1.24	1.64	0.84
Managing students' behaviors						2.59	0.84	0.68	0.91
Implementing classroom routines and procedures						1.69	0.76	0.57	0.92
Developing classroom communities for learning						1.3	0.89	0.72	0.92
Classroom environment (CT)	−7.83, 8.15	−8.30, 8.61	0.3	1	0.89				
Developing relationships with students						−1.96	1.24	1.25	0.81
Managing students' behaviors						2.1	0.95	1	0.83
Implementing classroom routines and procedures						0.04	0.9	0.88	0.87
Developing classroom communities for learning						−0.18	0.84	0.8	0.88
Professional responsibilities (PST)	−7.67, 7.86	−7.91, 8.13	15.9	0.99	0.89				
Maintaining accurate grades and student data						−0.58	1.07	1.11	0.88
Performing administrative tasks						−1.42	0.9	0.9	0.87
Interacting with school administrators						1.06	0.94	0.96	0.9
Communicating with families						0.94	1.02	1.05	0.89
Professional responsibilities (CT)	−5.15, 5.68	−5.49, 6.02	14.6	0.98	0.85				
Maintaining accurate grades and student data						−0.05	1.1	1.11	0.81
Performing administrative tasks						−0.35	0.89	0.84	0.84
Interacting with school administrators						0.44	0.86	0.85	0.86
Communicating with families						0.59	0.94	0.95	0.85
Reflecting on teaching						−0.63	1.16	1.12	0.79
Common Core (PST)	−13.77, 13.35	−13.59, 13.20	32.7	0.98	0.84				
Planning lessons aligned to Common Core Standards						−1.57	0.75	0.7	0.97
Creating formative assessments aligned with Common Core Standards						1.44	0.82	0.75	0.96
Working with Common Core aligned curriculum						0.13	1.13	0.88	0.97

(continued)

Table A6. (continued)

Measure/item	Item-step difficulty range	Person-measure range	% extreme cases	Item reliability	Person reliability	Item difficulty	Item infit	Item outfit	Item point-measure correlation
Common Core (CT)	−14.46, 14.22	10.25, 14.04	25.3	0.99	0.84				
Planning lessons aligned to Common Core Standards						−1.35	0.95	0.9	0.95
Creating formative assessments aligned with Common Core Standards						1.74	1.01	1.03	0.94
Working with Common Core aligned curriculum						−0.39	0.89	0.65	0.96
Domain-specific instructional support (PST)	−5.17, 5.17	−5.67, 5.68	48.9	0.98	0.86				
Culturally-relevant teaching						1.49	1.2	1.22	0.89
Planning and preparation						0.44	1.09	1.09	0.88
Professional responsibilities						−0.43	0.91	0.83	0.89
Classroom environment						−0.52	0.93	0.91	0.88
Instruction						−0.99	0.79	0.78	0.88
Domain-specific instructional support (CT)	−6.27, 6.10	−5.69, 6.59	37.5	0.98	0.72				
Culturally-relevant teaching						−0.11	0.94	0.89	0.8
Planning and preparation						1.64	1.34	1.43	0.77
Professional responsibilities						−0.71	0.98	0.97	0.77
Classroom environment						−0.61	0.91	0.91	0.8
Instruction						−0.21	0.76	0.71	0.83
Frequency of feedback (PST)	−6.97, 6.92	−7.43, 7.38	25.2	0.98	0.9				
Offered concrete suggestions						−0.45	0.87	0.79	0.91
Offered general observations						−0.89	0.9	0.91	0.9
Asked reflective questions						1.36	1.08	1.19	0.91
Referred to specific things PST did well						−0.41	1.14	1.1	0.89
Referred to specific things PST needs to improve						0.39	0.87	0.79	0.92
Frequency of feedback (CT)	−4.71, 4.96	−2.51, 5.72	17.8	0.99	0.76				
Offered concrete suggestions						−0.71	0.8	0.78	0.76
Offered general observations						−0.7	0.94	0.94	0.72
Asked reflective questions						0.09	1.01	1.01	0.76
Referred to specific things PST did well						−0.89	0.81	0.78	0.74
Referred to specific things PST needs to improve						0.72	0.98	0.98	0.8
Shared specific data when giving feedback (CT only)						1.49	1.35	1.38	0.73
Adequacy of feedback + observation (CT)	−6.51, 6.51	−6.80, 7.5	49.1	0.99	0.75				
CT gave PST feedback frequently enough						−0.02	0.84	0.59	0.87
CT's feedback helped PST learn to teach						1.12	0.83	0.88	0.81

(continued)

Table A6. (continued)

Measure/item	Item-step difficulty range	Person-measure range	% extreme cases	Item reliability	Person reliability	Item difficulty	Item infit	Item outfit	Item point-measure correlation
CT's feedback was consistent with field instructor						2.58	1.2	1.24	0.77
CT observed PST teach frequently enough						−3.68	1.06	1.26	0.83
Autonomy and engagement (PST)	−6.64, 9.18	−6.75, 9.27	50.2	0.95	0.65				
CT helped PST feel comfortable taking instructional risks						0.97	0.99	0.81	0.92
PST could go to CT for help when struggling						−0.8	1.07	0.8	0.88
CT's expectations of PST were appropriate						0.1	0.91	0.65	0.88
CT allowed PST to make own instructional decisions						−0.27	0.93	0.65	0.89
Collaborative Coaching (PST)	−2.19, 2.78	−2.82, 3.47	10.3	0.99	0.86				
PST and CT codesigned lessons						0.25	1.03	0.97	0.76
PST and CT co-taught lessons						0.54	1.19	1.18	0.78
CT offered feedback on PST's teaching						−0.84	0.96	0.98	0.67
CT encouraged PST to practice specific aspects						−0.48	0.89	0.79	0.71
PST and CT analyzed student work together						−0.02	1.03	0.98	0.74
CT shared data/evidence after observing PST teach						−0.08	0.94	0.87	0.74
CT asked PST to observe CT teach						0.61	1.16	1.08	0.78
Job assistance (PST)	−3.04, 3.71	−3.94, 4.39	25.3	1	0.85				
Offered advice on kinds of jobs to apply for						−2.06	0.97	1.13	0.81
Discussed specific job openings in placement school						−0.52	1.07	1.09	0.85
Helped PST prepare for an interview						0.99	0.93	0.97	0.88
Offered feedback on PST's resume						1.36	0.99	0.96	0.87
Discussed openings outside of placement school						0.24	0.79	0.77	0.89
Job assistance (CT)	−5.10, 5.62	−5.92, 6.42	8.4	1	0.89				
Offered advice on kinds of jobs to apply for						−2.02	0.91	1.02	0.83
Discussed specific job openings in placement school						−0.67	1.01	1.01	0.86
Helped PST prepare for an interview						1.36	0.97	1	0.86
Offered feedback on PST's resume						1.67	1.08	1.02	0.86
Discussed openings outside of placement school						−0.33	0.95	0.95	0.86

Note. PST = preservice teacher candidates; CT = cooperating teachers.

Authors' Note

All ideas expressed in this article should be attributed only to the authors.

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Notes

1. In our analyses, we use measures of instructional effectiveness (e.g., observation ratings) and qualifications (e.g., years of experience, tenure) as proxies for CTs as models of effective instruction. We acknowledge that these measures are likely insufficient for fully capturing being a "model" of effective instruction. Although it is likely necessary to be an instructionally effective teacher to be a high-quality model of practice, many mentors understand that learning teachers do not always know where to attend during observations or how to learn from what they observe. Thus, efforts to model often include more than mere demonstration; they can include, for instance, the highlighting of specific aspects of practice or facilitating reflective conversations about what PSTs learned during their observations of practice. These latter pedagogical moves can also be considered aspects of "coaching" (see next section), indicating that the lines between coaching and modeling area also somewhat blurry.
2. CPS at a glance (website) http://cps.edu/About_CPS/At-a-glance/Pages/Stats_and_facts.aspx
3. To accommodate multiple start dates and placement lengths for student teachers, which vary by TEPs, CPS administered pre-student teaching surveys to PSTs twice during the year to incoming student teachers.
4. Student teachers who had placements that were more than a term in length and with two different mentors received the survey twice.
5. Mentors who worked with multiple student teachers were sent a separate survey for each student teacher.
6. Where PSTs could not be linked to CTs (and their schools), we used registration information to identify their field placement schools; thus, we were able to link some PSTs to CPS and Consortium data on their field placement schools even where mentor information was missing.
7. All analyses focus on this analytic sample of CTs (n = 583) except when we compare CTs with non-CTs in the district (see Table A5). To ensure the latter analysis was as representative as possible, we used the full population of CTs that could be linked to CT personnel data (n = 956) and compared them with all other teachers in CPS (n = 17,184).
8. When PSTs worked with multiple CTs in the same semester, they were asked to respond to the survey with just one CT in mind (the one with whom they had worked most closely). When we found that more than one CT was associated with a PST over the course of a year, we linked the PST to whichever CT had completed a survey in the same term in which the PST had completed pre and post surveys.
9. The Rasch model is a member of the family of item-response latent-trait models. Using a set of carefully selected survey items (questions), it produces an interval scale that determines item difficulties and person measures. The items are arranged on the scale according to how likely they are to be endorsed (item difficulty). The scale is then used to show person measure, a quantitative measure of a person's attitude on a unidimensional scale. In other words, the items are used to define the measure's scale, and people are then placed on this scale based on their responses to the items in the measure. The scale units are logits (log odds units), which are linear and therefore suitable for use in simple and complex statistical procedures. For additional information, see https://consortium.uchicago.edu/downloads/9,585ccsr_rasch_analysis_primer.pdf, Wright and Masters (1982), and Bond and Fox, 2015.
10. For more details about the Rasch measures, please see Table A6.
11. This set of questions asked, "How effectively did your mentor teacher . . . ," and response categories were on a 4-point scale: 1 = *not at all effectively*; 2 = *somewhat effectively*; 3 = *effectively*; 4 = *very effectively*. PSTs perceived CTs as slightly more effective in the domains of delivering instruction, modeling professional responsibilities, and creating and maintaining a positive classroom environment (all with means of 3.6), followed by planning and preparation (3.5) and teaching in urban schools (3.4).
12. CPS has a teacher evaluation system (REACH) in place that includes teacher observation ratings, VA scores when available, and scores from teacher-created performance tasks for students. The observation protocol domains align with Charlotte Danielson's Framework for Teaching. CPS provided our research team the means of ratings in four domains of practice from at least two observations, which were typically conducted by either the principal or an assistant principal.
13. Throughout this article, we focus on unweighted observation scores—the mean of the various observation category domain scores. In separate models, we used weighted observation scores (D1 .25; D2 .25; D3 .40; D4 .1) which were calculated. Results were virtually identical so we report only unweighted scores. Also, in models using observation scores, we drop teachers who do not have complete observation information or who work in alternative school settings. Among CTs in our analytic sample, 485 CTs across 185 schools meet these criteria.
14. For more information, see CPS evaluator handbook (http://www.ctunet.com/rights-at-work/teacher-evaluation/text/CPS-REACH-Educator-Evaluation-Handbook-FINAL.pdf)

15. Regarding the latter, we asked PSTs to evaluate the quality of their CTs' instruction in each of the instructional domains. On the mentor survey, we asked CTs "how effective were you in mentoring" PSTs. The fact that the CT and PST measures are not entirely parallel is a limitation of our study.
16. Ideally, we would have reduced the survey-based predictors to a few uncorrelated Rasch measures that could have been entered into models simultaneously. However, there were a number of cases (see Table 5, in parentheses) where we were unable to reliably construct Rasch measures on either the CT or PST surveys; in these cases, we used individual survey items for both PST and CT predictors to maintain consistency and conceptual clarity across analyses. Because these survey-based items were often highly correlated with one another (e.g., could be included in same Rasch measure), it did not make sense to enter them simultaneously in regression models. Where justified (e.g., predictors were from personnel data or survey-based Rasch measures), we ran separate models where we entered predictors simultaneously and results were similar.
17. Instead of assuming a priori that student teaching improves PSTs perceptions of preparedness, we used *t* tests to compare the mean of Rasch preparedness scores pre-student teaching with the mean of Rasch preparedness scores post-student teaching (see Table A4). After student teaching, PSTs felt significantly more prepared across domains.
18. For models where CTs' observation scores predicted PSTs' preparedness, R^2 values ranged from .12 to .28 in the specifications without covariates, and from .21 to .35 in the models with covariates.
19. Given that many CTs teach in untested grades and subjects, we were able to link only 147 CTs to VAM information. As a result, standard errors are quite large and estimates may be imprecise.

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