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Relationships Between Novice Teachers' Social Resources and Workload Manageability

Elizabeth A. Bettini, PhD[1], Nathan D. Jones, PhD[1], Mary T. Brownell, PhD[2], Maureen A. Conroy, PhD[2], and Walter L. Leite, PhD[2]

Abstract

Novice special education teachers (SETs) consistently report feeling overwhelmed by their workloads, and their perceptions of their workloads predict outcomes of concern, such as burnout and plans to quit teaching. Yet, to date, research provides few insights into feasible strategies school leaders could use to help novices better manage workloads. Therefore, we examined how school social resources contribute to novice SETs' and general education teachers' (GETs) perceptions of workload manageability. We found that novice SETs' perceptions of workload manageability were predicted by instructional interactions with colleagues and schools' cultures of collective responsibility for students with disabilities, but not by instructional interactions with mentors. The pattern of relationships differed for GETs, suggesting different populations of novices may benefit from different supports.

Keywords

beginning teachers, workloads, social support, special education teachers

Novice special education teachers (SETs; those in their first 3 years) consistently report their workloads are unmanageable (Bettini et al., 2017; Fall & Billingsley, 2011; Mathews, Rodgers, & Youngs, 2017). For example, in a nationally representative survey, more than 75% of novice SETs said routine duties interfered with teaching, and more than 25% said workloads were "not at all" manageable (Billingsley, Carlson, & Klein, 2004). Furthermore, Bettini and colleagues found novice SETs rated workloads significantly less manageable than novice general education teachers (GETs).

Workload manageability (i.e., teachers' subjective perceptions of the degree to which responsibilities can be completed adequately within time allotted) is of concern because it has consistent relationships with emotional exhaustion (a component of burnout) and plans to leave teaching (e.g., Bettini et al., 2017; Embich, 2001). For instance, Embich (2001) found secondary SETs who felt more overloaded were also more likely to experience emotional exhaustion (a component of burnout). Furthermore, Bettini and colleagues (2017) found novice SETs who rated workloads less manageable were significantly more likely to experience emotional exhaustion; emotional exhaustion mediated a significant relationship between workload manageability and plans to continue teaching. Although workload manageability is only one factor contributing to negative outcomes, these studies suggest it is an important factor to address to prevent emotional exhaustion and sustain SETs' commitment (Bettini et al., 2017).

Based on these studies, scholars recommend that school leaders should help novices better manage workloads (Bettini et al., 2017; Fall, 2010). Yet no prior research has identified strategies leaders could use to accomplish this goal. Thus, the purpose of this study is to inform leaders' efforts to support novice teachers, by examining factors that contribute to novices' perceptions of workload manageability. Because prior research indicates novice SETs have substantially different experiences than novice GETs (Bettini et al., 2017; Jones, Youngs, & Frank, 2013; Youngs, Jones, & Low, 2011), we examine both populations, thus allowing us to provide leaders with information about how supports may need to be differentiated for novice SETs. We draw on conservation of resources (COR) theory to inform our

[1]Boston University, MA, USA
[2]University of Florida, Gainesville, USA

Corresponding Author:
Elizabeth A. Bettini, Special Education Program, School of Education, Boston University, 2 Silber Way, Office 222, Boston, MA 02215, USA.
E-mail: lbettini@bu.edu

conceptualization of potential strategies for improving novices' workload manageability.

Conceptual Framework: COR Theory

COR theory has been widely used in organizational research to examine employees' responses to workloads (Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014). COR theory posits employees have resources (e.g., time, social support), which they strategically deploy to fulfill job demands (Alarcon, 2011). Those with more resources feel better able to meet demands, while those whose resources are insufficient to meet demands may feel overwhelmed and experience negative consequences (e.g., burnout, attrition). Meta-analyses confirm the utility of COR theory for understanding how employees respond to resources and demands (Alarcon, 2011; Halbesleben et al., 2014), and a handful of education studies have demonstrated the utility of COR theory for examining teachers' responses to their workloads (e.g., Bettini et al., 2017; McCarthy, Lambert, Lineback, Fitchett, & Baddouh, 2016).

The implication of COR theory is that, to support novices in managing their workloads, leaders could either (a) reduce demands or (b) provide more resources. To reduce demands, they could assign fewer responsibilities and provide more time for fulfilling them. Yet reducing one SET's workload would require reassigning tasks to other personnel, an option that may not be feasible for most leaders, given reduced education funding (Leachman & Mai, 2014), decreases in SET employment in past decade (Dewey et al., 2017), and a growing SET shortage (Levin, Berg-Jacobson, Atchison, Lee, & Vontsolos, 2015). Under these conditions, school leaders may not have sufficient funding, personnel, and/or applicants to reduce demands.

Another option for helping novices manage workloads would be to provide more resources. COR theory broadly conceptualizes resources as anything necessary to attain goals, including material, temporal, and social resources (Halbesleben et al., 2014). Many teaching resources (e.g., curricular materials, professional development) are expensive, and increasing them may also not be feasible. However, there is one set of resources that can be improved for free—social resources. Organizational research consistently finds that social resources (e.g., collegial support, organizational culture) contribute powerfully to employees' perceptions of their ability to meet job demands (e.g., Melamed, Shirom, Toker, Berliner, & Shapira, 2006).

Thus, administrators could potentially improve novices' workload manageability by providing stronger social resources (Billingsley et al., 2004). Consistent with this possibility, Billingsley and colleagues' (2004) analysis of a nationally representative survey found SETs who reported receiving more social support were more likely to feel their jobs were manageable, though social support was not well-defined in this study. A handful of qualitative studies indicate which social resources may be especially important: (a) school cultures of collective responsibility (Kardos, Johnson, Peske, Kauffman, & Liu, 2001) and (b) instructional interactions with colleagues and mentors (e.g., Grossman & Thompson, 2004).

Collective Responsibility

When novices begin teaching, they are joining an established culture, with norms, values, and assumptions about how teachers should act (Youngs et al., 2011). Collective responsibility is a facet of school culture, defined as a prevailing belief that all teachers share responsibility for student learning (Lee & Smith, 1996). Collective responsibility has been associated with student achievement (Lee & Loeb, 2000; Lee & Smith, 1996) and novices' plans to continue teaching (e.g., Jones et al., 2013). In addition, one study identified cultures of collective responsibility as a contributor to novices' workload manageability (Kardos et al., 2001). Kardos and colleagues (2001) interviewed 50 novice teachers. When novices worked with experienced colleagues who took no responsibility for supporting them or their students, they felt overwhelmed. In contrast, novices in some schools experienced a school culture of collective responsibility, in which teachers regularly engaged in collective efforts to improve instruction. These novices felt better able to understand and fulfill demands. Kardos and colleagues concluded that school cultures of collective responsibility may support novices' workload manageability.

No studies have investigated whether novice SETs feel better able to manage workloads in schools with cultures of collective responsibility, but scholars have hypothesized that collective responsibility is likely especially important for SETs because their work requires collaborating with GETs to support students' success in general education (Jones et al., 2013; Mathews et al., 2017). Consistent with this possibility, Jones et al. (2013) found collective responsibility predicted novice SETs' commitment to continue teaching in their schools and districts, but not novice GETs' commitment. In addition, novice SETs in qualitative studies reported having to work harder to negotiate students' participation in general education when GET colleagues did not feel responsible for students with disabilities (e.g., Otis-Wilborn, Winn, Griffin, & Kilgore, 2005), though these studies have not evaluated school culture (Mathews et al., 2017).

Instructional Interactions With Mentors and Veteran Colleagues

Qualitative studies of novice GETs have found that they perceived workloads as more manageable when they had frequent instructional interactions with colleagues (Anderson & Olsen, 2006; Bergeron, 2008; Certo, 2006; Grossman &

Thompson, 2004). Grossman and Thompson (2004) examined three novice GETs' experiences. One reported that learning curriculum and developing lessons was not demanding, because colleagues provided materials and helped her develop plans. Another felt social studies instruction was manageable, because veteran social studies teachers co-planned with him and shared materials; in contrast, he seldom interacted with other English language arts (ELA) teachers and struggled to manage ELA curricula. The third novice reported her mentor provided management and emotional support, but little support for learning and implementing curricula; she described feeling overwhelmed by instructional demands (p. 292). Contrasts among novices' experiences led Grossman and Thompson to conclude that instructional interactions with colleagues contribute to novices' efforts to manage responsibilities. Subsequent qualitative studies of novice GETs have obtained similar results (e.g., Anderson & Olsen, 2006; Certo, 2006).

Novice SETs may have less access to mentorship and collegial interactions than novice GETs (Mathews et al., 2017; Wasburn-Moses, 2010; Youngs et al., 2011). For instance, Youngs and colleagues (2011) conducted interviews with two novice SETs and two novice GETs. Unlike SETs, novice GETs had daily interactions with grade-level colleagues whose responsibilities matched their own (Youngs et al., 2011). Similarly, Wasburn-Moses (2010) conducted a survey of 232 novices, in which she also identified disparities; SETs were significantly less likely to have a mentor, and their mentors were significantly less likely to have release time or compensation for mentoring. However, neither study examined whether SETs' opportunities to engage in instructional interactions with mentors and colleagues were related to their workload manageability.

Research Questions

We examined how school social resources (i.e., cultures of collective responsibility, frequency of instructional interactions with colleagues and mentors) contributed to novice SETs versus GETs' perceptions of workload manageability. In addition, we extend prior research comparing access to mentorship (Wasburn-Moses, 2010; Youngs et al., 2011), by comparing novice SETs' versus GETs' access to instructional interactions with colleagues and mentors. Research questions are as follows:

Research Question 1 (RQ1): Do school social resources (i.e., culture of collective responsibility, instructional interactions with mentors and colleagues) predict novice SETs' and GETs' workload manageability?
Research Question 2 (RQ2): Do novice SETs' perceptions of the frequency of their instructional interactions with colleagues and mentors differ from novice GETs' perceptions?

Based on prior research with GETs, we hypothesized the following:

Hypothesis 1: A culture of collective responsibility would positively predict novices' perceptions of workload manageability.
Hypothesis 2: Collective responsibility would predict workload manageability more strongly among novice SETs than GETs.
Hypothesis 3: Collective responsibility would predict workload manageability more strongly among SETs in inclusive and resource settings than in self-contained settings.
Hypothesis 4: The frequency of instructional interactions with mentors and colleagues would positively predict workload manageability.
Hypothesis 5: SETs would report less frequent instructional interactions with mentors and colleagues than GETs.

Method

Data Source

We conducted a secondary analysis of an extant data set, the Michigan Indiana Early Career Teacher (MIECT) study, which was funded by Carnegie Corporation and led by Drs. Peter Youngs and Ken Frank. MIECT surveys included rich information about all relevant constructs, including novice SETs' (n = 61) and GETs' (n = 184) perceptions of workload manageability, collective responsibility, and interactions with mentors and colleagues. For further background on the MIECT study design and survey instruments, please see other publications based on MIECT data (e.g., Bettini et al., 2017; Jones & Youngs, 2012; Jones et al., 2013; Kim, Youngs, & Frank, 2017; Pogodzinski, Youngs, & Frank, 2013; Pogodzinski, Youngs, Frank, & Belman, 2012; Qian, Youngs, & Frank, 2013; Youngs et al., 2011).

The MIECT study included 11 large urban districts (>8,000 students) in Michigan and Indiana. Urban districts were targeted because they were all hiring large numbers of beginning teachers and because these settings often present novices with greater challenges (see Table 1 for district demographics). Eligible participants included teachers who (a) taught first to eighth grade; (b) taught for three or fewer years; (c) taught academics; and (d) completed traditional teacher preparation. These criteria limit generalizability of results (e.g., results do not generalize to uncertified teachers or to teachers who completed alternative preparation) but allowed us to simplify statistical models because we did not have to control for teachers' qualifications.

Survey instrumentation and administration. Researchers developed the survey using previously validated scales (e.g., Penuel, Riel, Krause, & Frank, 2009). Researchers conducted

Table 1. School District Demographic Information.

	Students		
District	Total population	Minoritized racial/ethnic backgrounds (%)	Eligible for free or reduced-price lunch (%)
A	18,386	12	51
B	21,448	80	65
C	9,139	50	42
D	29,261	11	11
E	7,994	46	36
F	11,645	19	29
G	13,666	48	62
H	16,138	57	44
I	10,662	84	50
J	21,769	60	62
K	12,483	59	58

cognitive interviews[1] with a small sample of teachers, revising unclear items in response. Subsequently, surveys were administered twice per year, in fall and spring of 2007–2008 and 2008–2009. Consistent with Dillman's (2007) five contact approach, teachers first received a letter informing them of the study, followed by an email link to the survey; if they did not complete the survey after two reminders (i.e., one postcard and one email), they received a paper copy.

Participants. Of 78 eligible SETs in 2007–2008, 67% responded in fall, and 75% of them responded in spring. Of 50 eligible SETs in 2008–2009, 90% responded in fall, and 93% of them responded in spring; however, 20 had previously participated in 2007–2008 and were thus excluded from the 2008–2009 sample. Of 384 eligible GETs, 63% responded in fall and 76% of them responded in spring. Only the 61 SETs and 184 GETs who responded in both fall and spring were included in this analysis. Ninety-four percent of SETs and 83% of GETs identified as female, while 92% of SETs and 90% of GETs identified as White. District descriptive data indicated no significant differences between responders and nonresponders on any demographic characteristics (e.g., race, gender).

Measures. We used scales measuring workload manageability, collective responsibility, and instructional interactions with mentors and colleagues (Table 2 shows items and response options). For each latent construct, we fit a confirmatory factor analysis (CFA) using Mplus software (Muthén & Muthén, 2010). CFAs tested the hypothesis that items worked together to measure unidimensional constructs. We tested CFAs for SETs and GETs separately, as some constructs work differently for these populations (Bettini et al., 2017). We calculated composite reliability (Raykov, 1997), using parameter estimates from CFAs. In each measurement model, we set variance of the factor to 1 to address scale indeterminacy (Table 3 shows results of measurement models).

The *Workload Manageability* scale had adequate model fit and reliability for both SETs and GETs; prior investigations have further confirmed the predictive validity of this scale, finding that it predicted expected outcomes of workload manageability (i.e., the emotional exhaustion component of burnout and intent to continue teaching; Bettini et al., 2017). The *Frequency of Instructional Interactions With Mentors* scale also had adequate model fit and reliability for both SETs and GETs.

For SETs, the *Collective Responsibility for Students With Disabilities* scale also had adequate fit and reliability. For GETs, chi-square for the *Collective Responsibility* scale was significant, indicating data did not fit the model exactly; furthermore, comparative fit index (CFI; .834) and Tucker–Lewis index (TLI; .669) were low, indicating data also did not fit closely. We examined modification indices and the correlation matrix, which indicated the second and third items were highly correlated. We conducted CFA again, allowing these items to correlate. Chi-square was still significant, but CFI (.976) and TLI (.941) were high, indicating close fit using the accepted cutoff of .90 (Kline, 2011). We retained this model.

Chi-square for the *Frequency of Instructional Interactions With Colleagues* scale was significant for both SETs and GETs. The first item loaded poorly, perhaps because so few teachers reported not having any interactions with their colleagues (3 of 184 GETs; 1 of 61 SETs). We dropped this item and conducted CFA on remaining items. With only three items, the model had degrees of freedom of zero and therefore fit data perfectly, so we set the first item loading to one to obtain an overidentified model (Kline, 2011). This scale had adequate model fit and reliability for both SETs and GETs.

Table 2. Scales Measuring Workload Manageability, Collective Responsibility, and Instructional Interactions With Mentors and Colleagues.

Construct	Item
Workload manageability[a]	I am teaching with adequate resources and materials to do my job properly. My workload is manageable. I feel I'm working too hard on my job. (reverse scored) Administrative duties/paperwork do not interfere with my teaching.
Collective responsibility for students with disabilities[b]	Please indicate the proportion of teachers in this school who do the following: • Help maintain discipline in the entire school, not just their classrooms. • Take responsibility for helping one another do well. • Take responsibility for improving the overall quality of teaching in the school. The general education teachers understand what I do. The special education division backs me up when I need it.
Collective responsibility (general education teachers)[b]	Please indicate the proportion of teachers in this school who do the following: • Help maintain discipline in the entire school • Help maintain discipline in the entire school • Take responsibility for improving the overall quality of teaching in the school. • Set high expectations for academic work. • Feel responsible for ensuring that all students learn.
SETs' service delivery model	In a typical week, approximately what percent of your time is spent in each of the following teaching arrangements? Majority General Education Setting = 2; Majority Resource = 1; Majority Self-Contained or Other = 0
Frequency of instructionally focused interactions with mentors[c]	How often do you engage in professional interactions (e.g., interactions about curriculum, instruction, students, school policies, parents, etc.) with your mentor? In September and October, how often did you address each of the following with your mentor? • Reading/language arts curriculum (main topics and texts to be taught, including scope and sequence • Teaching strategies in reading/language arts • Reading/language arts classroom assessments
Frequency of instructionally focused interactions with colleagues	In September and October, did you engage in professional interactions (e.g., interactions about curriculum, instruction, students, school policies, parents) with one of more of your teaching colleagues who work at your school and who are responsible for instruction? (Yes/No) In September and October, how often did you address each of the following with one or more of the school-based colleagues whom you listed for the previous item?[c] • Reading/language arts curriculum (main topics to be taught, including scope and sequence) • Teaching strategies in reading/language arts • Reading/language arts classroom assessments

Note. SETs = special education teachers.
[a]Items rated on 5-point Likert-type scale (*strongly agree* to *strongly disagree*). [b]Items rated on 5-point Likert-type scale (*none* to *all*). [c]Items rated on 6-point Likert-type scale (*never* to *every day*).

Analyses

RQ 1. We used structural equation modeling (SEM) to answer the first research question. We tested measurement models using CFA, then saved factor scores and tested the structural model using path analysis of factor scores. This approach allowed us to model complex relationships with a relatively small sample. Factors scores are composites of items weighted proportional to their factor loadings, but they do contain some measurement error, unless composite reliability is equal to one. To correct for composite unreliability in the path model, we set the error variance for each factor to the factor scores' variance times one minus reliability (Kline, 2011). In SEM, a minimum of five observations has been recommended for each parameter estimated (Jackson, 2001, 2003; Tanaka, 1987); all analyses met these criteria. Missing data were addressed by estimating models with full information maximum likelihood estimation (Enders, 2001), which makes use of all available scores for each teacher.

Table 3. Results of CFAs Testing Measurement Models.

Factor/ group	Model fit	Item content	Loadings
Workload manageability			
SETs	χ^2 = 0.934, p = .627	My workload is manageable.	0.891***
	CFI: 1.000; TLI: 1.119	I feel I'm working too hard on my job. (reverse scored)	0.400**
	RMSEA: 0.000, CI = [0.000, 0.206]	Administrative duties/paperwork do not interfere with my teaching.	0.613***
	ρ_{xx} = 0.7	I am teaching with adequate resources and materials to do my job properly.	0.489**
GETs	χ^2 = 3.695, p = .1577	My workload is manageable.	0.945***
	CFI: 0.992; TLI: 0.977	I feel I'm working too hard on my job. (reverse scored)	0.670***
	RMSEA: .068, CI = [.000, .176]	Administrative duties/paperwork do not interfere with my teaching.	0.714***
	ρ_{xx} = .995	I am teaching with adequate resources and materials to do my job properly.	0.321**
Collective responsibility for students with disabilities			
SETs	χ^2 = 1.433 (p = .920)	Please indicate the proportion of teachers in this school who do the following:	
	CFI: 1.000; TLI: 1.079	• Help maintain discipline in the entire school, not just their classrooms.	0.656***
	RMSEA: .000, CI = [.000, .062]	• Take responsibility for helping one another do well.	0.927***
	ρ_{xx} = .808	• Take responsibility for improving the overall quality of teaching in the school.	0.885***
		The general education teachers understand what I do.	0.468***
		The special education division backs me up when I need it.	0.434***
GETs	χ^2 = 14.170, p = .0068	Please indicate the proportion of teachers in this school who do the following:	
	CFI: 0.976; TLI: 0.941	• Help maintain discipline in the entire school, not just their classrooms.	0.490***
	RMSEA: .120, CI = [.056, .190]	• Take responsibility for helping one another do well.	0.451***
	ρ_{xx} = .998	• Take responsibility for improving the overall quality of teaching in the school.	0.625***
		• Set high expectations for academic work.	0.696***
		• Feel responsible for ensuring that all students learn.	0.733***
Frequency of instructionally focused interactions with mentors			
SETs	χ^2 = 5.582 (p = .0614)	How often do you engage in professional interactions (e.g., interactions about curriculum, instruction, students, school policies, parents, etc.) with your mentor?	0.511***
	CFI: 0.953; TLI: 0.860		
	RMSEA: .197, CI = [.000, .400]		
	ρ_{xx} = .858	In September and October, how often did you address each of the following with your mentor?	
		• Reading/language arts curriculum (main topics and texts to be taught, including scope and sequence	0.849***
		• Teaching strategies in reading/language arts	0.906***
		• Reading/language arts classroom assessments	0.851***
GETs	χ^2 = 1.014, p = .602	How often do you engage in professional interactions (e.g., interactions about curriculum, instruction, students, school policies, parents, etc.) with your mentor?	0.713***
	CFI: 1.000; TLI: 1.012		
	RMSEA: .000, CI = [.000, .162]		
	ρ_{xx} = .896	In September and October, how often did you address each of the following with your mentor?	
		• Reading/language arts curriculum (main topics and texts to be taught, including scope and sequence	0.975***
		• Teaching strategies in reading/language arts	0.870***
		• Reading/language arts classroom assessments	0.711***
Frequency of instructionally focused interactions with colleagues			
SETs	χ^2 = .331, p = .5651	In September and October, how often did you address each of the following with one or more of the school-based colleagues whom you listed for the previous item?	
	CFI: 1.000; TLI: 1.038		
	RMSEA: .000, CI = [.000, .291]		
	ρ_{xx} = .904	• Reading/language arts curriculum (main topics to be taught, including scope and sequence)	0.830***
		• Teaching strategies in reading/language arts	0.970***
		• Reading/language arts classroom assessments	0.699***
GETs	χ^2 = 3.104, p = .0781	In September and October, how often did you address each of the following with one or more of the school-based colleagues whom you listed for item D2?	
	CFI: 0.99; TLI: 0.98		
	RMSEA: .110, CI = [.000, .258]		
	ρ_{xx} = .903	• Reading/language arts curriculum (main topics to be taught, including scope and sequence)	0.898***
		• Teaching strategies in reading/language arts	0.881***
		• Reading/language arts classroom assessments	0.802***

Note. CFA = confirmatory factor analysis; SETs = special education teachers; CFI = comparative fit index; TLI = Tucker–Lewis index; RMSEA = root mean square error of approximation; CI = 95% confidence interval; ρ_{xx} = composite reliability; GETs = general education teachers.
*p < .05. **p < .01. ***p < .001.

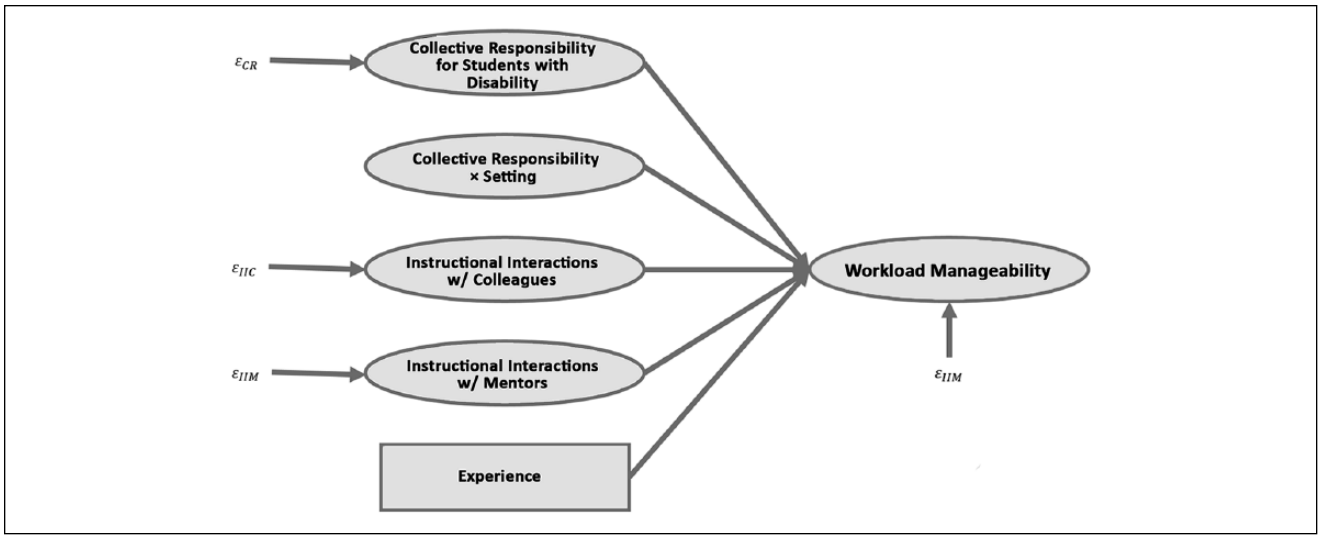

Figure 1. Hypothesized path model for special education teachers.

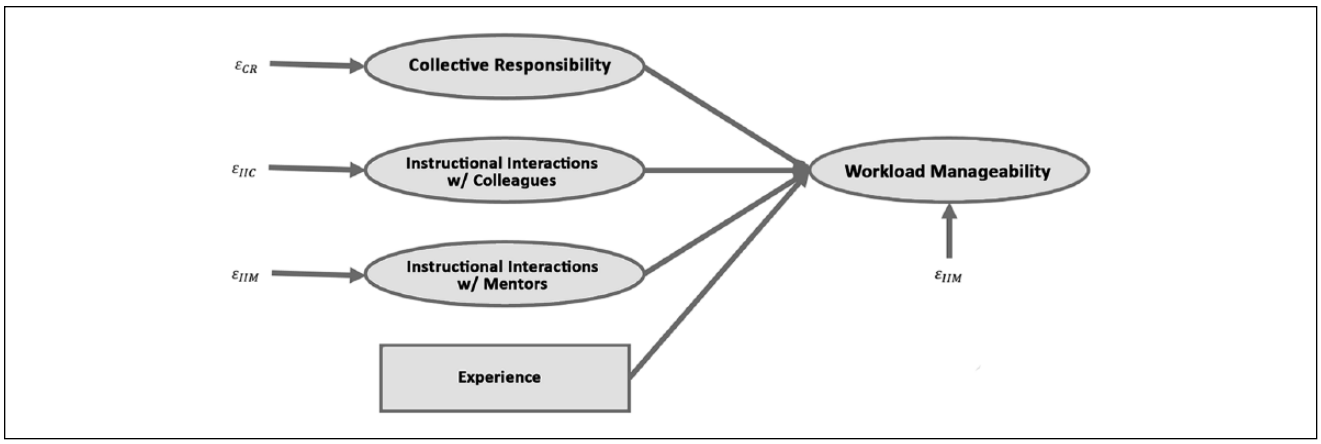

Figure 2. Hypothesized path model for general education teachers.

We tested structural models for SETs (see Figure 1) and GETs (see Figure 2). We entered teachers' years of experience into both models because novices in their second or third year interacted with mentors less frequently. Note two differences in the models. First, consistent with research indicating SETs may particularly rely on school cultures of collective responsibility for students with disabilities (e.g., Jones et al., 2013), the collective responsibility scale for SETs is slightly different from the collective responsibility scale for GETs, and is titled *Collective Responsibility for Students With Disabilities*. Second, the SET model includes a measure of SETs' service delivery model, as we hypothesized collective responsibility would be more important for SETs in general education settings; GETs, by definition, are in general education settings, thus it was not necessary to include this variable in the GET model.

RQ 2. We conducted one-way analysis of variance (ANOVA) to compare SETs' and GETs' responses to items for *instructional interactions with colleagues* and *instructional interactions with mentors*. Second- and third-year teachers were less likely to have a mentor than first-year teachers; thus, we compared items from the *instructional interactions with mentors* scale separately for each year.

Results

RQ 1: Relationships Between Social Resources and Workload Manageability

To determine whether SETs' perceptions of social resources predicted workload manageability, we tested the path model (see Figure 1) using data on social resources in fall and workload manageability in spring.

Table 4. Results of the Path Analysis for Workload Manageability for SETs and GETs.

Group	Workload manageability regressed onto	Coefficient (unstandardized)	*p* value (one-tailed)
SETs	Collective responsibility for students with disabilities	0.186	0.164
	Interaction between collective responsibility and setting	0.117	0.237
	Frequency of instructionally focused interactions with mentors	−0.130	0.273
	Frequency of instructionally focused interactions with colleagues	0.386**	0.006
	Experience	0.120	0.147
GETs	Collective responsibility	−0.037	0.326
	Frequency of instructionally focused interactions with mentors	0.572***	0.000
	Frequency of instructionally focused interactions with colleagues	−0.170*	0.017
	Experience	−0.014	0.432

Note. SETs = special education teachers; GETs = general education teachers.
*$p < .05$. **$p < .01$. ***$p < .001$.

The model was just identified (i.e., there were zero degrees of freedom), so model fit could not be obtained. Novice SETs' workload manageability was not significantly predicted by perceptions of the school's culture of collective responsibility for students with disabilities ($p = .1635$), the interaction between their setting and the school's culture ($p = .237$), or the frequency of instructional interactions with mentors ($p = .273$; see Table 4). Workload manageability was significantly predicted by instructional interactions with colleagues ($p = .006$). For every one standard deviation increase in the frequency of instructional interactions with colleagues in fall, workload manageability in spring increased by .386 standard deviations, consistent with our hypothesis. In addition, the frequency of instructional interactions with colleagues significantly correlated with both collective responsibility ($r = .252$, $p = .009$) and instructional interactions with mentors ($r = .493$, $p = .000$).

We tested the path model for GETs (see Figure 2) using data on social resources in fall and workload manageability in spring. Chi-square was not significant, indicating exact fit. Workload manageability was significantly predicted by interactions with mentors ($p = .000$) and colleagues ($p = .017$; see Table 4). A one standard deviation increase in interactions with mentors predicted a .572 standard deviation increase in workload manageability, consistent with hypotheses. A one standard deviation increase in instructional interactions with colleagues predicted a .170 standard deviation *decrease* in workload manageability, opposite our hypothesis. Collective responsibility did not predict workload manageability ($p = .326$).

Digging deeper: SETs' collegial interactions, school culture, and workload manageability. Results of the first path analysis indicated that collective responsibility for students with disabilities did not significantly predict novice SETs' perceptions of workload manageability. However, instructional interactions with colleagues did significantly predict workload manageability. One prior study found that colleagues may interact with novices more often when their school has a culture of collective responsibility (Qian et al., 2013); thus, instructional interactions with colleagues could mediate an indirect relationship between collective responsibility and workload manageability. Therefore, we conducted a follow-up analysis, testing whether instructional interactions with colleagues mediated the relationship between collective responsibility for students with disabilities and workload manageability (see Figure 3), using nonparametric bootstrapping to test indirect effects.

Collective responsibility for students with disabilities significantly predicted instructional interactions with colleagues ($p = .013$); a one standard deviation increase in collective responsibility for students with disabilities predicted a .145 standard deviation increase in instructional interactions with colleagues (see Table 5). In addition, instructional interactions with colleagues reciprocally predicted collective responsibility for students with disabilities ($p = .011$), such that a one standard deviation increase in instructional interactions corresponded with a .135 standard deviation increase in SETs' perceptions of their school's culture of collective responsibility for students with disabilities. Instructional interactions with colleagues mediated a significant indirect relationship between collective responsibility for students with disabilities and workload manageability ($p = .036$), such that a one standard deviation increase in collective responsibility for students with disabilities corresponded with a .057 standard deviation increase in workload manageability.

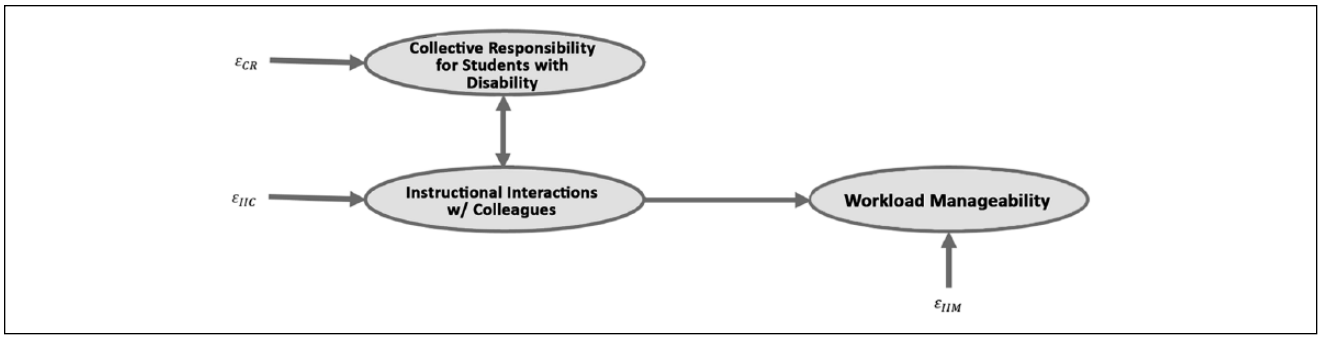

Figure 3. Hypothesized path model testing indirect effect of collective responsibility for students with disabilities on workload manageability via frequency of instructional interactions with colleagues.

Table 5. Testing the Indirect Effect of Collective Responsibility on Workload Manageability.

Effect	Factor	Regressed onto	Coefficient (unstandardized)	*p* value (one-tailed)
Direct	Workload manageability	Frequency of instructionally focused interactions with colleagues	0.389***	0.000
	Frequency of instructionally focused interactions with colleagues	Collective responsibility for students with disabilities	0.145*	0.013
	Collective responsibility for students with disabilities	Frequency of instructionally focused interactions with colleagues	0.135*	0.011
Indirect	Workload manageability	Collective responsibility for students with disabilities	0.057*	0.036

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 6. Comparing the Instructional Interactions With Colleagues of SETs and GETs.

	GETs		SETs		
Item	*M*	*SD*	*M*	*SD*	Teacher group effect
In September and October, how often did you address each of the following with one or more of the teaching colleagues whom you listed for Item D2?					
Reading/language arts curriculum	4.11	1.181	2.12	1.312	$F(1, 234) = 116.991$*** $p = 0.000$
Teaching strategies in reading/language arts	3.82	1.121	1.84	1.240	$F(1, 234) = 128.916$*** $p = 0.000$
Reading/language arts classroom assessments	3.38	0.123	1.55	1.148	$F(1, 231) = 106.880$*** $p = 0.000$

Note. Items were rated on a 6 point Likert-type scale (0 = *never*, 1 = < *once a month*, 2 = *1–3 times a month*, 3 = *1–2 times per week*, 4 = *3–4 times per week*, and 5 = *every day*). SETs = special education teachers; GETs = general education teachers.
*$p < .05$. **$p < .01$. ***$p < .001$.

RQ 2: SETs' Versus GETs' Instructional Interactions With Colleagues and Mentors

As shown in Table 6, SETs engaged in significantly fewer instructional interactions with colleagues than GETs, across all three items (data for all three items met the assumption of homogeneity of variance; Lomax, 2007). On average, SETs interacted with colleagues on instruction between "less than once a month" and "1–3 times a month." GETs interacted with colleagues on instruction between "1–2 times per week" and "3–4 times per week."

As shown in Table 7, novice SETs and GETs were equally likely to have an assigned mentor. In addition, there was no significant difference in the frequency of overall

Table 7. Comparing the Instructional Interactions With Mentors of SETs and GETs.

Item	GETs		SETs		Group effect
	M	*SD*	*M*	*SD*	
Year 1 (*n* = 24 SETs, *n* = 49 GETs)					
Do you currently have a mentor who was assigned to you by your school or district?	0.939	0.242	1.000	0.000	*F*(1, 62) = 1.139 *p* = 0.145
How often do you engage in professional interactions (e.g., interactions about curriculum, instruction, students, school policies, parents, etc.) with your mentor?	3.191	1.452	2.778	1.215	*F*(1, 58) = 1.115 *p* = 0.148
In September and October, how often did you address each of the following with your mentor?					
• Reading/language arts curriculum	2.432	1.605	1.529	1.419	*F*(1, 59) = 4.119* *p* = 0.024
• Teaching strategies in reading/language arts	2.419	1.384	1.419	1.121	*F*(1, 58) = 7.122** *p* = 0.005
• Reading/language arts classroom assessments	2.028	1.285	1.000	1.265	*F*(1, 58) = 7.495** *p* = 0.004
Year 2 (*n* = 22 SETs, *n* = 82 GETs)					
Do you currently have a mentor who was assigned to you by your school or district?	0.683	0.468	0.682	0.477	*F*(1, 102) = 0.000 *p* = 0.496
How often do you engage in professional interactions (e.g., interactions about curriculum, instruction, students, school policies, parents, etc.) with your mentor?	3.085	1.717	2.933	1.280	*F*(1, 60) = 0.099 *p* = 0.377
In September and October, how often did you address each of the following with your mentor?					
• Reading/language arts curriculum	1.942	1.378	0.800	0.775	*F*(1, 65) = 9.384** *p* = 0.002
• Teaching strategies in reading/language arts	1.519	1.196	0.867	1.060	*F*(1, 65) = 3.632* *p* = 0.031
• Reading/language arts classroom assessments	1.385	1.087	0.600	0.828	*F*(1, 65) = 6.664** *p* = 0.006
Year 3 (*n* = 15 SETs, *n* = 53 GETs)					
Do you currently have a mentor who was assigned to you by your school or district?	0.337	0.489	0.539	0.144	*F*(1, 64) = 1.106 *p* = 0.149
How often do you engage in professional interactions (e.g., interactions about curriculum, instruction, students, school policies, parents, etc.) with your mentor?	3.059	1.520	2.714	1.496	*F*(1, 22) = 0.257 *p* = 0.309
In September and October, how often did you address each of the following with your mentor?					
• Reading/language arts curriculum	2.474	1.611	1.000	0.894	*F*(1, 23) = 4.489* *p* = 0.022
• Teaching strategies in reading/language arts	2.263	1.522	1.667	0.983	*F*(1, 23) = 2.711 *p* = 0.056
• Reading/language arts classroom assessments	1.526	1.723	1.667	1.690	*F*(1, 23) = 0.430 *p* = 0.259

Note. SETs = special education teachers; GETs = general education teachers.
*$p < .05$. **$p < .01$. ***$p < .001$; one-tailed test of significance.

professional interactions with mentors in any year. However, first- and second-year SETs' interactions with mentors were significantly less likely to focus on instruction. By the third year, this difference had mostly disappeared, as neither SETs nor GETs were interacting with mentors frequently on teaching strategies or assessments; however, third-year GETs still interacted with mentors on reading and ELA curriculum significantly more often than third-year SETs.

Data met the assumption of homogeneity of variance for all but one item; variance for second-year SETs' curricular interactions with mentors was significantly smaller than variance for second-year GETs (Levene statistic = 4.676, $p = .034$). We compared these again using the Welch adjustment, which is robust to unequal sample sizes and unequal variances (Lomax, 2007); results remained significant (Welch statistic [1, 41.687] = 17.055, $p = .000$).

Discussion

We examined factors that contribute to novice SETs' and GETs' perceptions of workload manageability, to inform leaders' efforts to support novices. Drawing on COR theory, we posited that novices' social resources, including their school's culture of collective responsibility and frequent instructional interactions with colleagues and mentors, would support them in managing the demands of their workloads. Our findings indicate complex relationships may exist among novices' roles (SET, GET), their social resources, and workload manageability.

First, consistent with prior research (e.g., Jones et al., 2013), findings indicate a culture of collective responsibility for students with disabilities may indeed be important for novice SETs, as novice SETs' perceptions of collective responsibility directly predicted the frequency of instructional interactions with colleagues, which mediated a significant indirect relationship between collective responsibility and workload manageability. However, our findings also raise the possibility that collective responsibility may primarily contribute to novices' experiences by influencing the frequency of instructional interactions with colleagues, rather than by directly supporting novices' perceptions of workload manageability.

Second, the social resources that predicted workload manageability differed for novice SETs versus GETs. Instructional interactions with mentors predicted workload manageability among novice GETs but not among novice SETs. This was surprising, given prior research indicating mentorship helps SETs develop confidence (Billingsley, Griffin, Smith, Kamman, & Israel, 2009). Comparing SETs' and GETs' instructional interactions with mentors provides some insight into why this might be the case. SETs and GETs were equally likely to have a mentor, and they interacted with mentors with the same frequency overall, but SETs' interactions with mentors were significantly less likely to focus on instruction. Novice SETs may have spent more time with mentors discussing compliance and special education paperwork, but our SEM model did not examine those interactions; it is possible that, had we examined other kinds of interactions, we might have obtained different results. Another possible explanation is that novice SETs may have been assigned mentors whose knowledge and skill were not well matched to their needs, in which case mentors' support might not have been as helpful. Yet another possibility is that novice GETs benefitted more from their mentors because their mentors were typically from their school; 91% of GETs had mentors within their school, while only 62% of SETs had mentors from their own school (Jones, 2009), and it is possible that this accounts for differences in the usefulness of mentorship. We did not examine these possibilities, but they are worthy of future inquiry.

Instructional interactions with colleagues also had different relationships with workload manageability for SETs than for GETs. SETs who frequently interacted with colleagues on instruction felt better able to manage workloads, but the opposite was true for novice GETs. The positive relationship for SETs was aligned with prior research (e.g., Billingsley et al., 2004) and with our hypotheses. However, the negative relationship for GETs is difficult to understand, as it contradicts prior qualitative studies (e.g., Grossman & Thompson, 2004). There are several plausible explanations. It could be that novice GETs received more instructional support from colleagues when they were already struggling or feeling overwhelmed. Alternatively, interactions with colleagues may function as a demand, rather than a resource, for novice GETs, such that interacting with colleagues impinged on limited time, rather than supporting them. Another possibility is that there could be a quadratic relationship between the frequency of interactions with colleagues and workload manageability, such that interacting with colleagues either too frequently or too infrequently can be problematic. We cannot draw any conclusions, from this analysis, about why this relationship was negative for GETs and positive for SETs.

Finally, the average SET only interacted with colleagues on instructional issues a few times per month or less, whereas the average GET interacted with colleagues on instruction weekly. This suggest SETs may be more isolated than GETs, a major concern given the importance of social support for other outcomes (e.g., commitment; effectiveness; Jones et al., 2013; Kraft & Papay, 2014).

Limitations

The small sample is a limitation, as it reduced power. Furthermore, the sample characteristics limit generalizability. Participants were novice elementary and middle school teachers in large urban Michigan and Indiana districts who were fully certified through traditional preparation; results cannot be generalized to other teachers (e.g., preschool, high school, rural, suburban, and alternatively certified teachers). Data were collected in 2007–2009; major changes over the past 9 to 11 years (e.g., Common Core, education funding, state induction policies) may have impacted these relationships. Furthermore, we focused only on the frequency of instructional interactions, but other factors (e.g., caseload sizes, instructional responsibilities), other kinds of interactions (e.g., those focused on special education paperwork), and other aspects of interactions (e.g., quality) may also be salient for novices' experiences; our analysis only addresses differences in how instructional interactions predict workload manageability, and further investigations are needed to explore other factors related to workload manageability. Differences between SETs and GETs should be interpreted with caution, as our sample was not large enough

to test for measurement invariance using multigroup models. In addition, sample sizes were unequal, which will likely be a persistent limitation in studies comparing SETs' and GETs' experiences, given that there are fewer SETs than GETs in schools; however, all but one comparison met the assumption of homogeneity of variance, and the one exception was robust to violations of homogeneity of variance. We also tested slightly different models for SETs and GETs; this was necessary given differences in their roles, but it is a limitation to any comparisons between SETs and GETs. Finally, we aggregated data across several teacher groups (elementary and middle school teachers; SETs serving students with different disabilities); this was necessary due to our sample size, but it may conceal important differences in these teachers' experiences.

Implications for Future Research

Further research is needed to continue unpacking complex relationships among novices' roles, their social resources, and their workload manageability. Future studies should confirm our findings with larger, more generalizable samples, and test our findings with other populations, such as (a) SETs serving students with specific disabilities (e.g., emotional/behavioral disorders); (b) SETs serving in high schools, rural and suburban schools, and other regions of the country; and (c) SETs who are provisionally or alternatively certified. In addition, future studies should explore alternative ways of evaluating these relationships. For example, direct observations and qualitative interviews would be a useful way to more deeply examine relationships among social resources and workload manageability, potentially generating new hypotheses.

Future studies should also delve more deeply into why these relationships among novices' roles, school culture of collective responsibility, and instructional interactions with colleagues occur. For instance, we found instructional interactions with mentors did not predict novice SETs' workload manageability, but it is possible that other aspects of mentorship might. Future studies should examine whether other aspects of mentorship support novice SETs in managing their workloads. For instance, do novice SETs whose mentors interact with them frequently on issues of special education paperwork and legal compliance perceive their workloads as more manageable? Does the usefulness of instructionally focused mentoring interactions vary depending on alignment between mentors' and mentees' roles? Do mentors provide instructional support that is not as helpful to SETs as that provided by their colleagues?

Our finding, that instructional interactions with colleagues negatively predicted novice GETs' workload manageability, was contrary to our hypotheses and not aligned with prior qualitative research (e.g., Grossman & Thompson, 2004). Further research is needed to understand why this was the case. Future studies should specifically explore (a) the possibility that more overwhelmed and less skilled novice GETs were more likely to receive instructional support from colleagues; (b) the possibility that, for novice GETs, more frequent interactions with colleagues acts as a job demand rather than a resource; (c) the possibility that the relationship between workload manageability and the frequency of interactions with colleagues is quadratic, such that novices with either very frequent or very infrequent instructional interactions with colleagues feel workloads are less manageable; and (d) whether an interaction between the frequency of instructional interactions with colleagues and with the perceived usefulness of those interactions might predict workload manageability. Such studies would continue to benefit from SEM, as this method allows researchers to consider how various dimensions of collegial interactions differentially contribute to different educators' workload manageability. In addition, qualitative or mixed methods would allow researchers to continue building more sophisticated theory about the circumstances under which collegial interactions are helpful.

Our results indicate novice SETs may feel better able to manage workloads when they frequently talk with colleagues about instruction. Future research should continue exploring these interactions, examining what aspects of collegial interactions are helpful. Future research should also continue examining what factors facilitate more frequent instructional interactions between SETs and colleagues. Possible contributors include how well schedules are aligned to permit common planning time, GETs' attitudes toward inclusion (Scruggs, Mastropieri, & McDuffie, 2007), and administrators' expressions of support for collaboration (Hoppey & McLeskey, 2013). Future studies should also investigate whether novice SETs experience more frequent instructional interactions with colleagues when these conditions are present.

Implications for Practice

Our findings confirm that it may be possible for leaders to help novices feel better able to manage their workloads by improving their social resources. This is encouraging, as social resources can be improved without great expense (as compared with, for example, providing more material resources or fewer responsibilities). To improve novices social resources, leaders should actively promote instructional interactions among novice SETs and their colleagues. Our findings concur with prior research (Qian et al., 2013) in suggesting that leaders may be able to foster more interactions between novices and experienced colleagues by cultivating the school's culture of collective responsibility, communicating that all teachers should collaborate to serve all students (Hoppey & McLeskey, 2013). Our findings suggest that this may be especially important for novice SETs.

School leaders may also be able to support interactions between novices and colleagues by creating schedules that allow teachers who collaborate to co-plan and by developing structures (e.g., lesson study; Benedict, Park, Brownell, Lauterbach, & Kiely, 2013) that facilitate meaningful collaboration during that time (Scruggs et al., 2007).

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