Predicting Special Educators' Intent to Continue Teaching Students with Emotional or Behavioral Disorders in Self-Contained Settings

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Abstract

Schools experience difficulty retaining special educators to serve students with emotional or behavioral disorders (EBD) in self-contained settings, as they have higher rates of burnout and attrition than other educators. Administrators could prevent these outcomes by improving working conditions, but research provides limited insights into which conditions are most important for these special educators. Using structural equation modeling to analyze data from a national survey, we found that special educators' perceptions of adequacy of planning time, workload manageability, stress, and emotional exhaustion mediated relationships between other working conditions and intent to stay. Specifically, special educators who reported that they (a) spent more time planning outside school (b) supervised more paraprofessionals, (c) had limited access to curricular resources, and (d) served more heterogeneous instructional groups were more likely to report having insufficient planning time, unmanageable workloads, stress, emotional exhaustion, and intent to leave. Results imply that administrators should target planning time, curricular resources, and instructional grouping.

Retaining special educators to serve students with emotional or behavioral disabilities (EBD) is an urgent priority (Conroy, Alter, Boyd, & Bettini, 2014). Students with EBD have substantial mental health challenges, requiring skilled teaching to mitigate risks for poor long-term outcomes (Conroy et al., 2014). Approximately 37.1% of K–12 U.S. students with EBD receive instruction in self-contained settings for >60% of the day (Office of Special Education Programs [OSEP], 2017).

Teachers are the most important school-based influence on student outcomes (Master, Loeb, & Wyckoff, 2013), and strong teachers are especially important for students at high risk for poor outcomes, such as students with EBD in self-contained settings (Conroy et al., 2014). Yet, special educators serving students

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with EBD are less experienced and prepared (Billingsley, Fall, & Williams, 2006), report greater burnout (Nichols & Sosnowski, 2002), and have higher attrition (Gilmour & Wehby, 2019) than other special educators.

High attrition is concerning, as it has serious academic costs for students (e.g., Ronfeldt, Loeb, & Wyckoff, 2013) and financial costs for districts (Milanowski & Odden, 2007). Special education teacher attrition is especially concerning in light of the special education teacher shortage, as those who leave may be difficult to replace (Billingsley & Bettini, 2019). Thus, schools' capacity to provide skilled teachers for students with EBD requires that they retain these teachers.

Working conditions play a key role in attrition and may be an important lever for reducing attrition and promoting a stable teaching workforce for students with EBD (Billingsley & Bettini, 2019). Working conditions include demands (e.g., instructional responsibilities) placed on teachers, as well as logistical (e.g., planning time) and social (e.g., paraprofessional support, administrative support) resources that support teachers to meet demands (O'Brien et al., in press). Prior research consistently found that working conditions predict intent to leave teaching and affective responses to work, such as emotional exhaustion (a component of burnout; Brunsting, Sreckovic, & Lane, 2014). However, extant research provides limited insight into which working conditions are most important for special educators serving students with EBD or how working conditions interact with one another and with teachers' affective responses to contribute to plans to leave or stay (Billingsley & Bettini, 2019). Thus, the purpose of this investigation is to examine how special educators' working conditions in self-contained settings for students with EBD relate to their affective responses (i.e., emotional exhaustion, stress) and their intent to stay in teaching.

Working conditions play a key role in attrition and may be an important lever for reducing attrition and promoting a stable teaching workforce for students with EBD.

Conceptual Foundation: Conservation of Resources Theory

Conservation of resources theory posits that individuals meet job demands by strategically deploying resources (e.g., time, materials, social supports; Alarcon, 2011). When demands and resources are balanced, people feel able to manage workloads and experience positive affective outcomes; when demands exceed resources, employees may feel overwhelmed and consequently experience stress and emotional exhaustion, leading to attrition. Thus, workload manageability—the degree to which one feels that one's work can be completed in the time allotted—is a mediator of relationships between demands/resources and affective responses to work. Meta-analyses confirm that conservation of resources theory does predict these outcomes (Alarcon, 2011), and recent studies using this theory to predict special educators' attrition and intent to stay yielded significant results (Bettini, Gilmour, Williams, & Billingsley, in press; Bettini, Jones, et al., 2017; Gilmour & Wehby, 2019). We draw on conservation of resources theory to conceptualize how working conditions interact to contribute to special educators' affective responses to work and thereby contribute to their intent to continue teaching.

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Working Conditions

We drew on Bettini, Crockett, Brownell, and Merrill's (2016) review to conceptualize the working conditions shaping special educators' efforts to fulfill their responsibilities. We intersect their conception of working conditions

with conservation of resources theory to focus on demands (instructional responsibilities), logistical resources (planning time, curricular resources), and social resources (administrative support, paraprofessional support, school culture).

Demands. Prior research demonstrated that special educators serving students with EBD experience extensive demands (Bettini, Wang, Cumming, Kimerling, & Schutz, 2018) and their perceptions of job demands are associated with their intent to leave (Albrecht, Johns, Mounsteven, & Olorunda, 2009). Instructional responsibilities may be especially important. Planning and providing instruction is core responsibility for special educators, and they report struggling to fulfill this responsibility when they teach more students, when student needs are more heterogeneous, and when they teach more subjects and grades (Bettini, Wang, et al., 2018). Furthermore, Berry (2012) found that rural special educators who served more students were more likely to intend to leave, while special educators in DeMik's (2008) study shared that serving students with an array of needs contributed to their plans to leave.

Logistical resources. Logistical resources include curricular materials and planning time—practical supports that facilitate special educators' efforts to fulfill core instructional demands (Billingsley & Bettini, 2019). Although logistical resources have not been well researched, extant research indicates that they may be associated with intent to stay in teaching (Billingsley & Bettini, 2019).

Curricular resources are materials (e.g., textbooks) that provide teachers with clear guidance about what and how to teach (Siuty, Leko, & Knackstedt, 2018). A growing body of research indicates that curricular resources provide essential support for instruction (Siuty et al., 2018) and may be associated with intent to stay (Billingsley & Bettini, 2019). For example, Albrecht et al. (2009) found that special educators' ratings of material resources differentiated those who planned to continue teaching students with EBD from those who planned to leave.

Planning time provides special educators opportunities to plan instruction, complete paperwork, and consult with colleagues (Billingsley & Bettini, 2019). Special educators consistently report that planning time is essential for doing their work effectively (Bettini, Wang, et al., 2018), and some research indicates that those with more planning time are more likely to intend to stay, as are those with adequate time for paperwork (Albrecht et al., 2009; DeMik, 2008).

Social resources. Schools are social organizations, characterized by cultural norms, values, and assumptions that guide how teachers act and interact (Youngs, Frank, Thum, & Low, 2012). School social contexts provide teachers information about effective practices and access to resources, as well as personnel (e.g., colleagues, paraprofessionals) with whom to collaborate, which support them in managing the demands of their work (Billingsley & Bettini, 2019).

Research has consistently demonstrated relationships between a variety of social resources and intent to stay, including school culture of collective or shared responsibility for students with disabilities (Jones, Youngs, & Frank, 2013), collaborative school culture (Johnson, Kraft, & Papay, 2012), paraprofessional support (Albrecht et al., 2009), and administrative support (Cancio, Albrecht, & Johns, 2013; Gersten, Keating, Yovanoff, & Harniss, 2001). For example, Conley and You (2017) analyzed a nationally representative survey of secondary special educators and found that perceptions of administrative support and school culture predicted job satisfaction, commitment, and intent to stay. In a recent review, we concluded that research on how special educators' social contexts relate to their intent to stay is robust and well established, though few studies have examined paraprofessional support (Billingsley & Bettini, 2019). Few studies have tested complex relationships among social resources (Billingsley & Bettini, 2019), but scholars posit that social resources are not independent of one another; for example, administrators can shape school culture (Billingsley, McLeskey, & Crockett, 2014).

Furthermore, scholars have posited that because administrators coordinate the work of all teachers in the school, administrative support may underlie other working conditions, including demands and logistical resources (Billingsley et al., 2014). For example, by creating school master schedules, administrators can ensure that special educators have appropriate instructional groups and planning time; by considering special educators' needs when ordering materials, they can ensure that special educators have necessary curricular resources (Billingsley & Bettini, 2019).

Workload Manageability

Workload manageability (also known as role overload) is "teachers' subjective perceptions of the degree to which responsibilities can be completed adequately within time allotted" (Bettini, Jones, et al., 2018, p. 113). Studies consistently show that when teachers feel that workloads are manageable, they experience more positive affective responses to work (e.g., reduced emotional exhaustion) and are more likely to intend to stay (Albrecht et al., 2009; Bettini, Jones, et al., 2017). For example, Bettini, Jones, et al. found that beginning special educators who rated their workloads less manageable were more emotionally exhausted and more likely to intend to leave. However, studies have seldom articulated what factors lead teacher to feel that workloads are more manageable (Bettini, Jones, Brownell, Conroy, & Leite, 2018), and no studies have examined the possibility, posited by conservation of resources theory, that workload manageability may mediate relationships between working conditions and affective outcomes and intent to stay (Billingsley & Bettini, 2019).

Purpose

To retain a strong special education teacher workforce for students with EBD, we need to understand how working conditions relate to teachers' intent to stay. Thus, we investigated the following: How do working conditions interact to contribute to special educators'

workload manageability, affective responses (i.e., stress, emotional exhaustion), and intent to continue teaching in self-contained settings for students with EBD? We hypothesized the following:

> *Hypothesis 1:* Resources and demands will predict workload manageability such that special educators feel that workloads are more manageable when they have more resources and fewer demands.
> *Hypothesis 2:* Workload manageability will mediate relationships between resources/demands and affective outcomes such that teachers who experience fewer resources and more demands will perceive workloads as less manageable and therefore experience higher emotional exhaustion and stress.
> *Hypothesis 3:* Emotional exhaustion and stress will mediate a relationship between workload manageability and intent to stay such that teachers who rate workloads less manageable will experience more emotional exhaustion and stress and therefore be more likely to intend to leave.
> *Hypothesis 4:* Administrative support will predict intent to stay, both directly and indirectly (i.e., its effects will be partially mediated by relationships with other resources and demands).

Methods

Survey Development

We developed the survey using items from existing surveys and scales (e.g., Schools and Staffing Survey: National Center for Education Statistics [NCES], 2012; Michigan Indiana Early Career Teacher Study: Jones et al., 2013) that demonstrated strong model fit and reliability in prior studies. For constructs without well-validated scales, we adapted related items from prior studies (e.g., Albrecht et al., 2009), creating new items based on qualitative studies (e.g., Bettini, Wang, et al., 2018). We submitted items to six expert reviewers, revising on the basis of feedback. For example, an expert reviewer

raised concerns about whether all teachers would define "self-contained" the same way, so we added a definition of the term. We then conducted cognitive interviews with seven teachers from the target population (i.e., special educators in self-contained settings for students with EBD). We made revisions iteratively, according to feedback from each interview, and stopped conducting interviews when subsequent interviews yielded no new insights. Interviews helped us identify terms and response options that need adjustment. For example, they revealed that teachers needed a definition of curricular resources. The final survey (Appendix A, available online) took about 20 minutes to complete (psychometrics for all constructs follow).

Sampling and Survey Administration

We surveyed a national sample of special educators in self-contained settings for students with EBD, including separate classes in neighborhood schools and alternative educational settings. To participate, special educators had to teach in self-contained K–12 special education classes, serving at least 50% students with EBD. The Institutional Review Boards at our institutions approved all procedures, and we obtained participant consent within the survey.

We obtained a list of U.S. districts from the Common Core of Data, stratifying them by size and using population ranges defined by the NCES to prevent oversampling small districts relative to the proportion of students they serve. We randomly selected 25 districts from each stratum (very large [>33,552 students], large [10,474–33,552], medium [3,523–10,473], and small [25–3,522]), contacting those districts' special education directors. If a director declined, we selected the next district in the stratum; 41 districts agreed and 180 declined. In addition, directors in 3 districts agreed to participate but violated study protocols; we excluded these districts.

Participating districts are demographically comparable to those that declined on most

dimensions, except that they serve significantly fewer American Indian students (Appendix B, available online). Although we stratified by size, 29% of participating districts are very large, 24% large, 22% medium, and 24% small, and mean enrollment in participating districts (7079) is larger than those that declined (2648); this difference was not statistically significant, due to large *SD*s, but is noteworthy. We did not stratify by region, resulting in over-/underrepresentation by region (29% West, 12% Midwest, 41% South, 17% Northeast), a limitation.

Special education directors provided contact information for relevant teachers in their district. We administered the survey to 20 districts in October/November 2017 and 21 districts in February/March 2018. In each administration, a district administrator first sent eligible teachers an email introducing the study. Over 3 weeks, we then contacted teachers up to three times: an email with a link to the online survey (Qualtrics), a reminder email to nonresponders, and a paper survey in a preaddressed stamped envelope with a $2 bill to nonresponders. We received completed surveys from 235 teachers (51.2%), of whom 171 met inclusion criteria.

Most identified as female (72.37%) and White/Caucasian (72.00%); 10.00% identified as Black or African American, 1.33% as Asian or Pacific Islander, 11.33% as Hispanic or Latinx, 4.67% as two or more races, and 0.67% as other. Most had a degree in special education (61.04%), a teaching certificate (72.73%), and a special education certificate (63.64%), with an average of 12.74 years' experience. Most (83.35%) taught in self-contained classes in general education schools; 16.65% taught in alternative schools. They taught an average of 8.73 students, of whom 8.11 received special education services for emotional disturbance.

Measurement

The survey included items measuring intent to stay, workload manageability, affective outcomes (i.e., stress, emotional exhaustion), and working conditions (i.e., social resources,

logistical resources, demands). We coded items so that a higher score indicates a positive experience (e.g., higher scores on workload manageability indicate that a teacher rated workload more manageable; higher scores on stress indicate that a teacher reported less stress). We coded all items this way except for the observed indicators for numbers of lessons to plan, students, paraprofessionals, and hours planning outside the school day.

We used confirmatory factor analysis to test whether each scale measured a unidimensional construct, using MPlus (Muthén & Muthén, 2018; Table 1). We set variance of factors to 1 to address scale indeterminacy, using standard fit indices to assess model fit (nonsignificant chi-square, root mean square error of approximation [RMSEA] <.10, comparative fit index [CFI], Tucker-Lewis index [TLI] >.90; Kline, 2016).

Intent to continue teaching. Five items evaluated intent to stay. Three asked whether teachers were considering other jobs; one asked whether they would choose to become a teacher again; and one asked how long they planned to remain. The final item had low variance, as most teachers planned to stay in education "until retirement" or "as long as I am able," indicating that either they were very committed or they interpreted *as long as I am able* differently from intended. We excluded this item. Model fit was initially poor, with a low loading on Item 4 ($\lambda = 0.39$), perhaps because it addressed retrospective regrets, not future plans. We dropped this item and tested remaining items, setting variance of the first item to 1 to obtain an overidentified model. A three-item model fit exactly, with strong reliability ($\rho_{xx} = 0.83$; Table 1).

Emotional exhaustion. Four items evaluated emotional exhaustion, a component of burnout when "emotional resources are depleted" (Maslach & Jackson, 1981, p. 99). Prior studies found that these items measured a unidimensional construct and predicted expected outcomes (Bettini, Jones, et al., 2017). The initial model did not fit exactly ($\chi^2 = 19.97$, $p = .0002$); CFI and TLI indicated close fit

(CFI = 0.96, TLI = 0.98), but RMSEA was high (0.19). Two items about teachers' feelings at the end of the day were highly correlated, which was theoretically plausible, as they both referenced exhaustion at the same time of day. By allowing these items to correlate, the model fit exactly, with strong composite reliability ($\rho_{xx} = 0.92$).

Stress. Four items asked how stressed teachers felt about interactions with students. The model fit exactly, with strong reliability ($\rho_{xx} = 0.83$). One loading was low ($\lambda = 0.34$, $p < .001$), but model fit was inadequate when it was removed, so we retained a four-item model (Table 1).

Workload manageability. We measured workload manageability using three items from Bettini, Jones, and colleagues' (2017) study; they obtained exact fit for these items, but one item had a low loading ($\lambda = 0.40$). Thus, we added two additional items to give us the option of dropping items. The five-item model fit the data well, and composite reliability was strong ($\rho_{xx} = 0.83$; Table 1).

Social resources

Administrative support. We adapted eight items from prior studies (e.g., Cancio et al., 2013), adjusting them to reflect how special educators describe administrator support in qualitative studies (Bettini, Wang, et al., 2018; Prather-Jones, 2011). The model fit closely, but two items about support for instruction were highly correlated, which was plausible. By allowing them to correlate, the model fit exactly, with strong reliability ($\rho_{xx} = 0.90$; Table 1).

Paraprofessional support. One observed indicator asked how many full- and part-time paraprofessionals worked in teachers' classes. We developed Likert-type items based on how teachers described paraprofessional support in qualitative studies (e.g., Bettini, Wang, et al., 2018). Four items addressed perceptions of paraprofessionals' training and/or support needs; four addressed trust in paraprofessionals. Model fit for the

Table I. Confirmatory Factor Analysis Results for Measurement Models.

Model Fit	Variable: Items[a]	Loading
	Administrative support	
$\chi^2 = 23.73, p = .21$	My administrators actively support my classroom management.	.835***
RMSEA = 0.4,	My administrators actively support my students' behavior plans.	.840***
CI [0.00, 0.08]	My administrators include me in disciplinary decisions for my students.	.688***
CFI = 0.99		
TLI = 0.99	My administrators understand my instructional responsibilities	.751***
	My administrators help me improve my instruction.	.700***
	My administrators protect the time I have for instruction.	.597***
	My administrators support my students' transition into more inclusive settings.	.706***
	My administrators care about me as a person.	.685***
	Curricular resources	
$\chi^2 = 3.10, p = .21$	I have adequate curricular resources (e.g., instructional materials, scope and sequence, books, etc.)	.782***
RMSEA = 0.06,	My curricular resources support my students' individual learning needs	.837***
CI [0.00, 0.18]		
CFI = 1.00	My curricular resources support my students' learning in the gen. education curriculum	.768***
TLI = 0.99		
	My curricular resources support what I learn in professional development	.774***
	Collaborative culture	
$\chi^2 = 12.28, p = .09$	Value my input	.818***
RMSEA = 0.079,	Are willing to collaborate with me about my students' instruction	.836***
CI [0.00, 0.13]		
CFI = 0.99	Are willing to collaborate with me about my students' behavior	.815***
TLI = 0.98	Understand the purpose of my classroom/program	.809***
	Understand what I do	.736***
	Back me up when I need it	.869***
	Collective responsibility	
$\chi^2 = 2.18, p = .14$	Help maintain discipline in the entire school, not just their classrooms	.785***
RMSEA = 0.09,	Help maintain responsibility for helping one another do well	.872***
CI [0.00, 0.25]		
CFI = 0.995	Take responsibility for improving the overall quality of teaching in the school	.846***
TLI = 0.967		
	Make a commitment to helping every student learn	.793***
	Planning time	
$\chi^2 = 0.28, p = .60$	I interact with other teachers during my planning time.	.526***
RMSEA = 0.00,	My scheduled planning time is productive.	.859***
CI [0.00, 0.21]	I have adequate time scheduled for planning and preparation.	.782***
CFI = 1.00		
TLI = 1.02		
	Paraprofessional training	
$\chi^2 = 2.10, p = .35$	My paraprofessionals are adequately trained in behavior management.	.800***
RMSEA = 0.02,	My paraprofessionals are adequately trained in providing instructional support.	.921***
CI [0.00, 0.16]		
CFI = 1.00	My paraprofessionals need a lot of support from me.	.317**
TLI = 1.00	I have adequate scheduled time to develop my paraprofessionals' knowledge.	.713***

Table 1. (continued)

Model Fit	Variable: Items[a]	Loading
	Paraprofessional trust	
$\chi^2 = 7.58$, $p = .02$	I can count on my paraprofessionals to make good decisions.	.828[***]
RMSEA = 0.13, CI [0.04, 0.24]	I can trust my paraprofessionals to interact positively with my students.	.892[***]
CFI = 0.97	I can count on my paraprofessionals to behave professionally.	.884[***]
TLI = 0.92	My paraprofessionals are an essential part of my classroom.	.453[***]
	Instructional grouping	
$\chi^2 = 0.00$, $p = .97$	The students in my class all have similar academic learning needs.	.826[***]
RMSEA = 0.00, CI [0.00, 0.00]	It is manageable to deliver instruction that meets all of my students' learning needs in one lesson.	.616[***]
CFI = 1.00	The students in my class have similar social-emotional needs.	.561[***]
TLI = 1.04		
	Emotional exhaustion	
$\chi^2 = 2.56$, $p = .11$	I feel emotionally drained from my work.	.825[***]
RMSEA = 0.10, CI [0.00, 0.26]	I feel used up at the end of the work day.	.803[***]
CFI = 1.00	I feel fatigued when I have to get up in the morning and face another day on the job.	.904[***]
TLI = 0.98	I feel burned out from my work.	.893[***]
	Stress	
$\chi^2 = 3.47$, $p = .17$	Providing academic instruction	.340[***]
RMSEA = 0.07, CI [0.00, 0.19]	Responding to inappropriate behavior	.779[***]
CFI = 0.99	Students' verbal aggression	.889[***]
TLI = 0.97	Students physical aggression	.852[***]
	Intent to stay	
$\chi^2 = 0.58$, $p = .45$	If I was offered another job outside of education, I would leave teaching.	.556[***]
RMSEA = 0.00, CI [0.00, 0.19]	I think about transferring to another school.	.843[***]
CFI = 1.00	I think about transferring to work with students who do not have EBD.	.781[***]
TLI = 1.01		
	Workload manageability	
$\chi^2 = 9.25$, $p = .10$	I feel I'm working too hard on my job	.779[***]
RMSEA = 0.074, CI [0.00, 0.15]	There is too much work to do	.860[***]
CFI = 0.98	I have enough time within designated school hours to do my job well	.472[***]
TLI = 0.96	Administrative duties/paperwork interfere with my instructional responsibilities	.592[***]
	My workload is manageable	.793[***]

Note. Loadings are standardized. CFI = comparative fit index; RMSEA = root mean square error of approximation; TLI = Tucker-Lewis index.
[a]Collective responsibility and collaborative culture items capture proportion of colleagues doing those behaviors (response options: *all, most, some, few, none*). Stress items capture how stressed special education teachers felt about issues (response options: *not at all, a little, somewhat, very*). Other scales asked to what extent special education teachers agreed/disagreed with statements (response options: *strongly agree, agree, neither agree nor disagree, disagree, strongly disagree*). All items are coded so that higher numbers indicate more positive experiences: a higher score on "My workload is manageable" indicates stronger agreement; a higher score on "There is too much work to do" indicates stronger disagreement.
[**]$p < .01$. [***]$p < .001$.

full scale was poor. We thus split the scale in two, one measuring trust and one measuring training. The training model fit exactly and the trust model fit closely, both with strong reliability ($\rho_{xx} = 0.81$ and $\rho_{xx} = 0.87$, respectively; Table 1).

School culture. We adopted items used in prior studies to evaluate school culture of collective responsibility (e.g., Bettini, Jones, et al., 2018); these items ask about the proportion of colleagues who teachers perceived as sharing responsibility for student and teacher learning. We added items that qualitative studies indicated were important to special educators in self-contained settings (e.g., *Please indicate the proportion of teachers in this school who . . . value my input*). Model fit was poor, and the correlation matrix indicated that items related to collaboration were distinct from items related to collective responsibility. We divided the scale into two measures: a culture of collective responsibility and a collaborative culture. Both fit exactly and had strong reliability (collective responsibility: ρ_{xx} = 0.89; collaborative culture: ρ_{xx} = 0.92).

Logistical resources

Planning time. The survey included one item modified from a prior study (*I have adequate scheduled time for planning and preparation*; Albrecht et al., 2009), two items about whether planning time provided opportunities to collaborate and was productive, and a fourth item about hours spent planning outside school. The full model fit closely, but the fourth item's loading was low (λ = 0.22, p = .003). We dropped this item, setting the first item's variance to 1 to obtain an overidentified model. The model fit exactly with strong reliability (ρ_{xx} = 0.81). We included the number of hours planning outside school as an observed indicator.

Curricular resources. We adapted one item from Albrecht and colleagues' (2009) study (*I have adequate curricular resources*), making adjustments based on teachers' comments in cognitive interviews. We created three new items to capture whether curricular resources supported key aspects of teachers' roles. The model fit exactly, with strong reliability (ρ_{xx} = 0.87).

Demands

Instructional grouping. One item (an observed indicator) asked how many students teachers taught. Four items asked if teachers felt that their class size was reasonable and that students shared similar needs. Model fit was poor, as the class size item did not correlate with others. We dropped this item and the model fit closely, with moderate reliability (ρ_{xx} = 0.71).

Lesson planning responsibilities. Two items asked what grades and subjects teachers taught. We combined these to create an observed indicator of number of lessons taught. For example, a teacher teaching math in three grades and science in two grades teaches five lessons.

Analysis

With 171 participants, we could not test all hypotheses simultaneously in a single model while adhering to the minimum of five observations/parameter (Kline, 2016). Thus, we approached the analysis in stages. In the first, we tested relationships among workload manageability, affective responses, and intent to stay (Figure 1). In the second, we tested hypotheses about social resources (Figure 2). In the third, we tested hypotheses about logistical resources (Figure 3). In the fourth, we tested hypotheses about demands (Figure 4). Finally, in the fifth, we tested a combined model, with all predictors that were significant in prior models; we also included teacher experience as a control. This approach allowed us to test complex relationships among many conditions with a relatively small sample. In each model, we tested indirect effects (mediated relationships) only if direct effects with mediating constructs were significant. We used full information maximum likelihood estimation to address missing data.

Results

Because of item coding, a positive coefficient indicates that a positive experience on one factor predicts a positive experience on another (e.g., a positive coefficient between workload manageability and stress indicates that those with more manageable workloads were less stressed). We report results for retained paths, interpreting results only for the
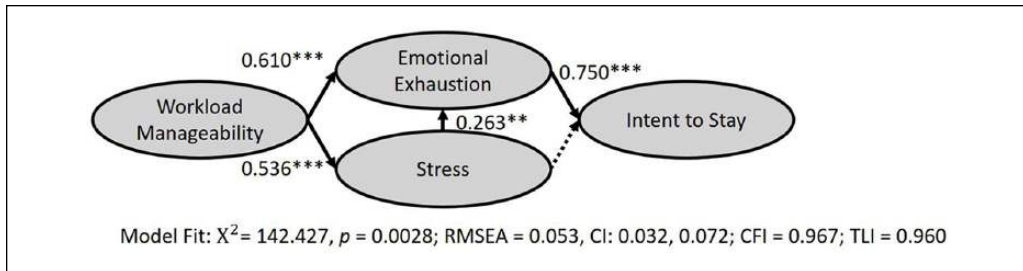
Figure 1. Stage 1: Affective Responses. CFI = comparative fit index; RMSEA = root mean square error of approximation; TLI = Tucker-Lewis index. $^{**}p < .01.$ $^{***}p < .001.$
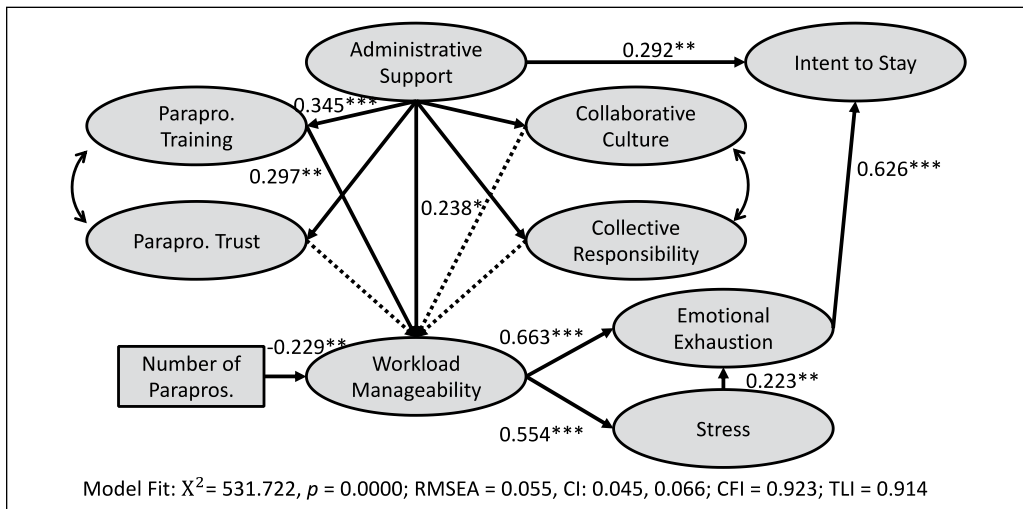

Figure 2. Stage 2: Social context model. CFI = comparative fit index; RMSEA = root mean square error of approximation; TLI = Tucker-Lewis index. $^{*}p < .05.$ $^{**}p < .01.$ $^{***}p < .001.$

final model. Appendix C reports the initial model for Stages 1–4; Appendix D reports models with retained pathways for Stages 1–4; Appendix E reports the initial model for Stage 5; and Appendix F reports the retained model for Stage 5 (appendixes available online).

Stage 1: Affective Responses

The first model tested whether affective responses predicted intent and mediated a relationship between workload manageability and intent. Model fit was acceptable ($\chi^2 = 142.427$, $p = .0028$; RMSEA = 0.053, CI [0.032, 0.072]; CFI = 0.967; TLI = 0.960; see Figure 1). Workload manageability significantly predicted emotional exhaustion and stress, and emotional exhaustion predicted intent. Stress predicted emotional exhaustion; it did not significantly directly predict intent, but it did have a significant indirect relationship, mediated by emotional exhaustion. Workload manageability significantly indirectly predicted intent, mediated by stress and emotional exhaustion. All relationships were in hypothesized directions.

Stage 2: Social Resources

We then tested Figure 2. Model fit was below accepted cut points, and three paths were insignificant: paraprofessional trust, collective responsibility, and collaborative culture did not
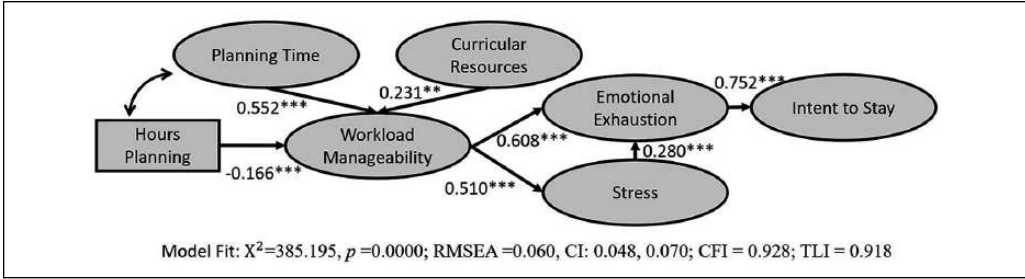
Figure 3. Stage 3: Logistical resources model. CFI = comparative fit index; RMSEA = root mean square error of approximation; TLI = Tucker-Lewis index. $^{**}p < .01.$ $^{***}p < .001.$
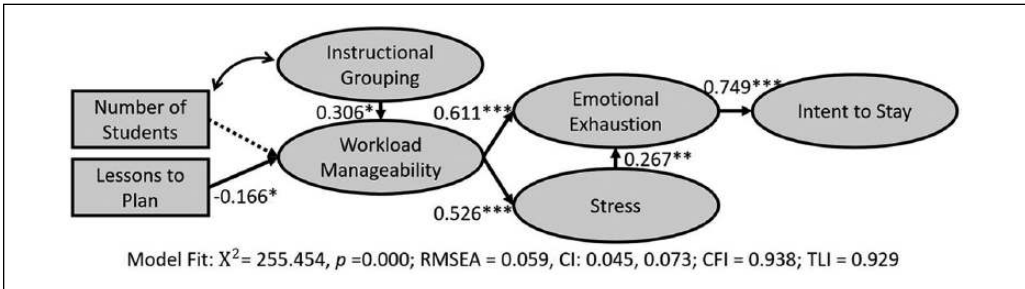

Figure 4. Stage 4: Demands model. CFI = comparative fit index; RMSEA = root mean square error of approximation; TLI = Tucker-Lewis index. $^{*}p < .05.$ $^{**}p < .01.$ $^{***}p < .001.$

predict workload manageability. Number of paraprofessionals predicted workload manageability but in the opposite expected direction: more paraprofessionals were associated with a less manageable workload. We conducted two post hoc tests to understand this. First, we added the number of students to the model, hypothesizing that the relationship between number of paraprofessionals and workload manageability could be spurious, caused by the assignment of more paraprofessionals to teachers with more students. Second, we added an interaction term to test whether paraprofessional training moderated this relationship. Both post hoc tests were insignificant, indicating that supervising more paraprofessionals was more overwhelming, even when paraprofessionals were well trained, and this effect was not explained by the assignment of more paraprofessionals to teachers with more students. We removed insignificant paths, improving model fit ($\chi^2 = 531.722, p = .0000$; RMSEA = 0.055, CI [0.045, 0.066]; CFI = 0.923; TLI = 0.914). Administrative support,

paraprofessional training, and number of paraprofessionals predicted workload manageability, which mediated a significant indirect relationship with stress, emotional exhaustion, and intent. Administrative support also directly predicted intent.

Stage 3: Logistical Resources

We then tested Figure 3, which fit closely ($\chi^2 = 385.195, p = .0000$; RMSEA = 0.060, CI [0.048, 0.070]; CFI = 0.928; TLI = 0.918). Curricular resources, planning time, and the number of hours spent planning outside school predicted workload manageability, which mediated indirect relationships with stress, emotional exhaustion, and intent, in expected directions.

Stage 4: Demands

Next, we tested Figure 4, which fit closely. However, one path was significant in the opposite direction from that expected: the

number of students taught positively predicted workload manageability, indicating that teachers rated workloads more manageable when they taught more students. This could be an artifact of controlling for whether instructional groups were manageable. To test this possibility, we tested the model again, with an interaction between number of students and perceptions of instructional grouping; the interaction was significant, indicating that teachers serving more students perceived workloads as more manageable when they felt that students shared similar instructional needs but less manageable when they felt that students had dissimilar instructional needs. Due to our small sample size, we were unable to test indirect effects and interaction terms simultaneously; we thus dropped the number of students who teachers served, retaining only their perceptions of whether students shared common instructional needs (i.e., instructional grouping). The model fit closely ($\chi^2 = 255.454$, $p = .0000$; RMSEA = 0.059, CI [0.045, 0.073]; CFI = 0.938; TLI = 0.929). Instructional grouping and the number of lessons that teachers planned significantly predicted workload manageability, which mediated indirect relationships with stress, emotional exhaustion, and intent to stay.

Stage 5: Testing All Paths Concurrently

Finally, we tested all significant paths from prior stages, adding teachers' years of experience (Figure 5). This model fit poorly ($\chi^2 = 1,258.488$, $p = .0000$; RMSEA = 0.067, CI [0.060, 0.074]; CFI = 0.835; TLI = 0.823), and instructional grouping, curricular resources, and paraprofessional training no longer predicted workload manageability. We posited that planning time might be mediating relationships between these conditions and workload manageability: when instructional groups were less manageable, curricular resources less available, and paraprofessionals not as well trained, teachers might have more to do during planning time and might thus perceive workloads as less manageable.

Thus, we conducted a post hoc analysis, testing planning time as a mediator between these conditions and workload manageability (Figure 6). The model met criteria for close fit on some fit indices but not all; however, fit was much better than the prior model ($\chi^2 = 922.194$, $p = .0000$; RMSEA = 0.064, CI [0.056, 0.072]; CFI = 0.873; TLI = 0.861). This model explained 45% of variance in planning time, 31% in curricular resources, 59% in workload manageability, 30% in stress, 65% in emotional exhaustion, and 58% in intent to stay.

As in prior models, workload manageability predicted stress and emotional exhaustion. Stress predicted emotional exhaustion and partially mediated an indirect relationship between workload manageability and emotional exhaustion. In turn, emotional exhaustion predicted intent and mediated relationships between stress and workload manageability and intent.

> *As in prior models, workload manageability predicted stress and emotional exhaustion.*

Workload manageability mediated indirect relationships between demands/resources and stress, emotional exhaustion, and intent: (a) an increase in adequacy of planning time predicted a decrease in stress and emotional exhaustion and an increase in intent; (b) an increase in curricular resources predicted a decrease in stress and emotional exhaustion and an increase in intent; (c) an increase in instructional grouping predicted a decrease in stress and emotional exhaustion and an increase in intent; (d) an increase in hours planning outside school predicted an increase in stress and emotional exhaustion and a decrease in intent; (e) an increase in number of paraprofessionals predicted an increase in stress and emotional exhaustion and a decrease in intent; and (f) an increase in administrative support predicted a decrease in stress and emotional exhaustion and an increase in intent. Administrative support also directly predicted intent.
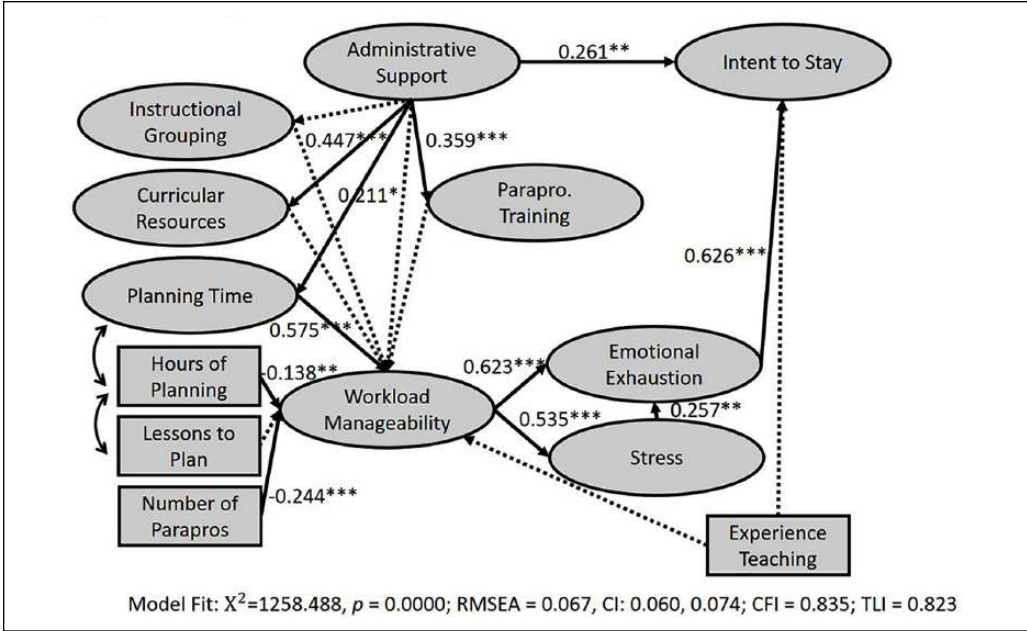
Figure 5. Stage 5: Full model. CFI = comparative fit index; RMSEA = root mean square error of approximation; TLI = Tucker-Lewis index. $^*p < .05.$ $^{**}p < .01.$ $^{***}p < .001.$
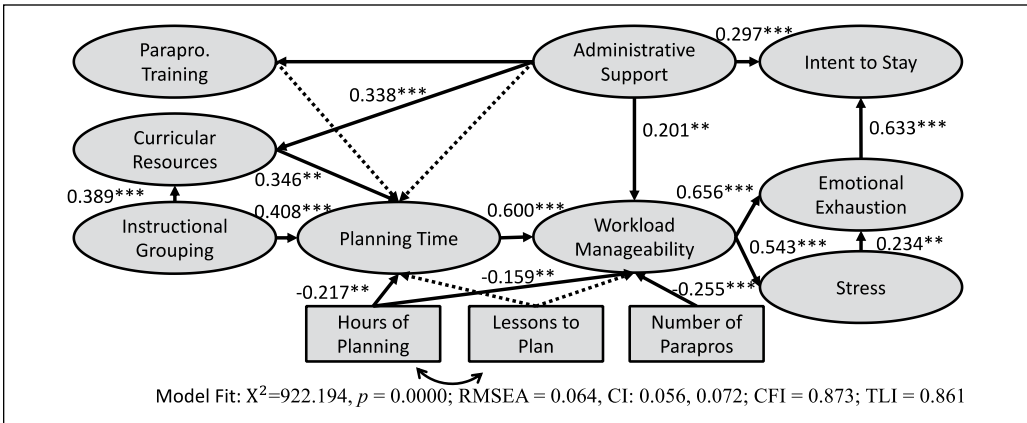

Figure 6. Post hoc test: Planning time as a mediator between resources/demands and workload manageability. CFI = comparative fit index; RMSEA = root mean square error of approximation; TLI = Tucker-Lewis index. $^*p < .05.$ $^{**}p < .01.$ $^{***}p < .001.$

Planning time predicted workload manageability, mediating relationships between other factors and workload manageability; an increase in curricular resources, instructional grouping, and administrative support predicted an increase in workload manageability, while

an increase in hours planning outside school predicted a decrease in workload manageability. In addition to indirect effects, an increase in administrative support directly predicted an increase in workload manageability, while an increase in number of paraprofessionals and

hours spent planning outside school both directly predicted a decrease in workload manageability.

Teachers who perceived instructional groups as more homogeneous were more likely to rate curricular resources and planning time highly. An increase in administrative support also predicted an increase in ratings of curricular resources, while an increase in ratings of curricular resources corresponded to an increase in ratings of planning time. Curricular resources partially mediated several indirect relationships: an increase in instructional grouping corresponded to an increase in perceptions of planning time, and an increase in administrative support predicted an increase in planning time, both mediated by ratings of curricular resources.

> *Teachers who perceived instructional groups as more homogeneous were more likely to rate curricular resources and planning time highly.*

Discussion

We examined complex relationships among demands, resources, affective responses, and intent to stay among special educators serving students with EBD in self-contained settings. We found that demands, resources, and affective responses accounted for 58% of variance in intent to stay and they interacted with one another in complex ways.

Relationships Among Demands, Resources, Affective Outcomes, and Intent to Stay

Hypothesis 1: Predictors of workload manageability. Results provide support for our first hypothesis: that demands and resources predict workload manageability. Our findings regarding curricular resources and planning time align with prior research showing that these conditions shape special educators' experiences serving students with EBD (e.g., Albrecht et al., 2009), though our study is the

first to examine how these conditions relate to workload manageability. Our study is also the first to find that when teachers report serving homogeneous groups, they are more likely to rate workloads as manageable and thus to intend to stay.

However, several hypotheses were rejected. First, paraprofessional training and trust in paraprofessionals did not predict workload manageability in the full model. Furthermore, supervising more paraprofessionals predicted weaker workload manageability, greater stress and emotional exhaustion, and reduced intent to stay; this was not explained by paraprofessional training or the number of students. These findings differ from prior studies (e.g., Albrecht et al., 2009); however, prior studies did not measure number of paraprofessionals, nor did they include a workload manageability scale. One explanation is that whereas we conceptualized paraprofessionals as a social resource, supervising them may instead be a demand. Alternatively, differences between our findings and prior studies could be due to differences in measurement of paraprofessional support or our inclusion of covariates (e.g., administrative support) that prior studies did not include. Our finding could also be an artifact of including "part time" paraprofessionals in the item; we phrased this item such that we cannot disaggregate full- versus part-time paraprofessionals. In short, findings must be interpreted cautiously, but this finding challenges our conception of paraprofessional support and warrants further study.

Special educators' perceptions of schools' cultures of collaboration and collective responsibility also did not predict any outcomes, contrary to prior research (Albrecht et al., 2009; Bettini, Jones, et al., 2018). Prior studies included different special educators (e.g., novices; Bettini, Jones, et al., 2018; Jones et al., 2013) or measured school culture differently (e.g., Albrecht et al., 2009), which could account for differences. Our study also included a broader range of predictors than prior studies; it is possible that other studies' findings were accounted for by correlations between school culture and other factors (e.g., administrative support).

Special educators' perceptions of schools' cultures of collaboration and collective responsibility also did not predict any outcomes, contrary to prior research.

Hypothesis 2: Workload manageability as a mediator. Consistent with hypotheses, workload manageability explained relationships between working conditions and affective responses. The centrality of workload manageability supported our conceptual foundation, which integrated working conditions from Bettini and colleagues' (2016) framework with the concepts of demands, resources, and affective responses, from conservation of resources theory (Alarcon, 2011). Our findings align with tenets of conservation of resources theory, indicating that when resources are low and demands are high, teachers experience unmanageable workloads and burnout and are more likely to plan to leave (Alarcon, 2011). These results align with a growing body of research (e.g., Bettini, Jones, et al., 2017) demonstrating that conservation of resources theory can predict special educators' affective outcomes and intent.

Hypothesis 3: Emotional exhaustion and stress as mediators. Consistent with prior research (Bettini, Jones, et al., 2017) and with conservation of resources theory, emotional exhaustion (a component of burnout) explained the relationship between workload manageability and intent. Burnout is similar in symptomatology to depression (Bianchi, Boffy, Hingray, Truchot, & Laurent, 2013), so it is understandable that emotionally exhausted teachers would seek another job. In contrast, stress did not mediate between workload manageability and intent. One possible explanation is that although stress can be problematic, it can also be motivating, spurring better outcomes (Selye, 1956); this interpretation supports Brunsting and colleagues' (2014) contention that emotional exhaustion may better indicate risk for attrition than stress. Another possibility is that self-report stress measures may be weaker indicators of stress

than objective measures, such as biometric indicators (e.g., cortisol; Ellis, Del Giudice, & Shirtcliff, 2013).

Consistent with prior research and with conservation of resources theory, emotional exhaustion (a component of burnout) explained the relationship between workload manageability and intent.

Hypothesis 4: Administrative support as a predictor. Our findings supported our fourth hypothesis: that administrative support directly and indirectly predicted intent to stay, confirming prior research (Albrecht et al., 2009). Our findings validate the idea, often stated but seldom tested, that administrative support underlies other working conditions (Billingsley, 2004; Gersten et al., 2001); administrative support predicted ratings of other conditions, including curricular resources, paraprofessional training, school culture, and workload manageability, some of which partially mediated a relationship between administrative support and intent.

Planning time as a mediator. Our post hoc test revealed complex interactions among instructional grouping, curricular resources, and plan time; teachers who reported that instructional groups were more homogeneous rated curricular resources and planning time more positively. This could indicate that when students share instructional needs, teachers need fewer materials and less plan time. This makes intuitive sense; if students all read at the same level, teachers may be able to plan reading instruction in less time, using fewer resources, than if students' skills vary widely. Similarly, teachers who rated curricular resources more highly reported having stronger plan time; strong curricular resources may reduce time spent seeking out or creating materials. The role of plan time in mediating relationships between other conditions and workload manageability is intriguing, indicating that it may be important to consider in future research. However, these findings resulted from a post

hoc analysis; they were not part of our original hypotheses. Thus, they should be considered with caution and confirmed in future studies.

Limitations

This is the largest national study of special educators serving students with EBD to test relationships among a variety of working conditions, but it has several limitations. First, some regions are not represented as well as others; thus, regional variation in working conditions could bias findings. Second, teachers may respond differently in February/ March than October/November, potentially biasing results; understanding variability in teachers' ratings of their working conditions across the year would provide stronger insights into how collecting data at different time points might change findings. Third, the sample is relatively small for structural equation modeling, and we may not have had adequate power to detect some relationships that have been significant in other analyses with larger samples. Fourth, we did not control for secondary versus elementary levels, but prior research indicates that this may be an important control (Bettini et al., in press). Fifth, the full model (Stage 5) did not fit closely, and coefficients may not be trustworthy; coefficients from Stages 1–4 are trustworthy, as they fit the data closely or exactly, but these models excluded some factors and thus may be susceptible to omitted variable bias. Finally, we included only special educators serving students with EBD in self-contained settings; results generalize only to this population of teachers, and we cannot draw conclusions about other teachers based on these findings.

Implications for Future Research

First, given limitations, researchers should replicate our analyses, testing similar models with other special educators (e.g., novices, special educators in inclusive settings). Such studies should attend to our limitations, seeking larger samples and stratifying by region

and district size. One efficient way to accomplish this would be for NCES national survey studies to include items that permit disaggregation of data by student disability category and service delivery model. Currently, the NCES collects extensive data on working conditions through the National Teacher and Principal Survey (formerly the Schools and Staffing Survey), which is administered every 4 years. However, its instrument does not contain sufficient information to disaggregate special educators who teach different populations of students or in different service delivery models. Incorporating these items into the National Teacher and Principal Survey would permit researchers to use these national data sets for more nuanced investigations, with a larger sample than the present study.

We need further research to understand our findings regarding paraprofessionals. Such research could consider whether aggregating full- and part-time paraprofessionals into a one category might explain our finding. Researchers might also consider potential moderators of this relationship; for example, does this relationship vary depending on whether teachers have adequate time to coordinate with paraprofessionals? Identifying moderators could provide insights into how to support teachers to supervise paraprofessionals in these settings.

Second, emotional exhaustion is just one component of burnout, and researchers should examine whether other components have different relationships with working conditions, workload manageability, and intent. Similarly, other measures of stress (e.g., biometric indicators, such as cortisol levels; Ellis et al., 2013) could yield different findings.

Third, future studies should consider examining resources and demands not included in our study. We focused on instructional demands, but special educators have many other demands on their time (e.g., paperwork, supervision; O'Brien et al., in press), which could be examined in future studies. Similarly, we omitted some important resources (e.g., preparation, professional development; school-wide systems) that could provide resources that facilitate special educators'

efforts. Future studies should consider incorporating these kinds of resources into their analysis.

Fourth, we encourage researchers to integrate our measures (i.e., working conditions, workload manageability, intent) into teacher- and school-level intervention research. Measuring working conditions before and after interventions would permit researchers to determine if the intervention improves these outcomes, testing a potential side effect. Studies of multitiered systems of support have incorporated teacher outcomes and found positive effects on burnout (e.g., Oakes, Lane, Jenkins, & Booker, 2013), highlighting the utility of this approach. Furthermore, by measuring working conditions before interventions, researchers could test whether working conditions moderate effectiveness or implementation fidelity, thereby illuminating conditions under which the intervention is more likely to be effective and implemented with fidelity.

Fifth, we recommend that scholars systematically validate our scales, examining how they converge with other measures. For example, how do ratings of the adequacy of planning time align with actual time spent planning? Researchers could also test if scales' properties vary according to the teachers surveyed. Bettini, Jones, et al. (2018) found that a measure of school culture operated differently for special versus general educators; differences could also plausibly exist among special educators serving different student populations in different service delivery models. Understanding these nuances will be important for determining what items to use with whom.

Finally, we urge researchers to develop and test interventions to improve working conditions in self-contained settings for students with EBD. Decades of research have shown which conditions are associated with intent to leave (e.g., Billingsley & Bettini, 2019), and this study indicates how these conditions matter. Interventions could focus on improving working conditions and teaching special educators to cope with challenging conditions (e.g., stress management, self-advocacy). Future research on administrative support could be used to develop interventions, by (a)

examining which conditions administrators feel efficacious to change, as those most amenable to change could be prime targets for intervention; (b) identifying specific administrative behaviors that improve special educators' ratings of these conditions; and (c) developing and testing interventions to see if changing those behaviors leads to improvement in workload manageability, emotional exhaustion, and intent. Researchers could use group or single-case designs with our workload manageability scale, adapted for repeated measurement, as a dependent variable. Researchers can also explore coping skills that may enhance resiliency to challenging working conditions (e.g., Cancio et al., 2018). We think that it is important to focus on improving working conditions, but information about how to cope with challenging working conditions may be valuable to teachers whose conditions do not improve quickly.

Implications for Policy and Practice

We found that resources and demands accounted for a large portion of variance in intent to continue teaching, an encouraging finding, as school and district leaders have capacity to improve these conditions. Our findings indicate that when special educators in self-contained settings for students with EBD say that they are overwhelmed, leaders should take those concerns seriously. We encourage leaders to ask why they feel overwhelmed and find ways to reduce demands or increase resources, with a focus on protecting plan time and supporting paraprofessional supervision. Furthermore, results suggest that leaders may enhance perceptions of plan time by providing curricular resources, which may save teachers from spending time seeking or creating materials. Special educators in the present study taught multiple content areas and grades (O'Brien et al., in press); leaders should ensure that they have the same curricular resources as general educators, in all grades and subjects that they teach. Moreover, because students with EBD often have substantial skill gaps, they also need resources for remediated interventions.

Conclusions

Students with EBD are at greater risk for poor long-term outcomes than are students with any other disabilities, and they require highly effective teachers to mitigate those outcomes (Conroy et al., 2014). Leaders have a responsibility to ensure they are well supported (Bettini, Cumming, Merrill, Brunsting, & Liaupsin, 2017). Our findings provide strong indications that leaders might fulfill this responsibility by improving working conditions. Research, however, is needed to test interventions to better support special educators serving students with EBD in self-contained settings.

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Supplemental Material

The supplemental material is available in the online version of the article.