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Comparing Special Education and General Education Teachers' Stress, Job Demands, and Resources during COVID-19

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Abstract: Recent scholarship has demonstrated the negative impacts of the pandemic on educators. However, it is less clear whether special education teachers (SETs) incurred more severe effects. This mixed-methods study draws on a survey of 419 teachers from 38 schools in New York State to identify differential impacts of the pandemic on SETs. Our analysis found that SETs reported lower levels of stress compared to general education teachers and perceived that greater support was available to them. Open-ended responses provided a space for SETs to describe the experience of teaching during the pandemic and identify particular stressors and challenges they faced. These findings hold important implications for the SET workforce as stress is a major factor linked to the educator shortages facing many schools. Ensuring that SETs are supported and retained is critical

to ensure that the needs of students receiving special education services are being met in the post-pandemic era.

Keywords: Mixed-methods, Educator stress, JD-R framework, Teacher turnover, Students with disabilities

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Teaching has been characterized as a profession associated with high levels of stress, which may be mitigated by appropriate and adequate supports (Kush et al., 2022; Kyriacou, 2001; Pugliesi, 1999; Wilcox & Lawson, 2018). During the COVID-19 pandemic, however, researchers noted the increased demands placed on teachers and reports of heightened stress levels across the profession (Hirshberg et al., 2023; Kush et al., 2022; Leo et al., 2022; Ozamiz-Extebarria et al., 2021). Various factors have been identified as exacerbating educators' stress levels including weakened school support systems, fraught community-school relationships, and new and difficult work-related challenges such as the need to rapidly transition to online learning during school closures and comply with social distancing mandates when schools reopened for in-person instruction (Hartney & Finger, 2022; Pressley & Ha, 2022; Wilcox et al., 2023).

While this scholarship has demonstrated the negative impacts of the pandemic on general education teachers, it is less clear whether special education teachers (SETs) – who have historically reported relatively high levels of stress, experienced pandemic-related challenges differently (Boe et al., 1997; Brunsting et al., 2014; McGrew et al., 2023). To explore this issue, this mixed-methods study draws on a survey of 419 (344 general education and 75 special education) teachers from 38 schools in New York State. Through the Jobs Demands-Resources (JD-R) model (Bakker & Demerouti, 2007), this analysis focuses on SETs' reported stress levels as well as perceptions of support in their working contexts relative to their general education counterparts.

Statistical analyses found that SETs reported lower levels of stress compared to general education teachers. Specifically, SETs reported lower levels of work stress and COVID-related stress, reported experiencing fewer demands and stressors, and perceived that greater supports and resources were available to them. Open-ended survey responses provided a space for SETs to describe the experience of teaching during the pandemic in their own words and identify particular stressors and challenges they faced. These responses serve as a reminder that, although quantitative analysis showed that SETs reported less stress than general education teachers,

qualitative analysis indicated they nonetheless experienced stressful working conditions during the pandemic.

These findings hold important implications for maintaining and growing the educator workforce, as stress is a major factor linked to the teacher shortages facing many school districts, shortages that were more severe for those working in special education prior to the pandemic (Carver-Thomas & Darling-Hammond, 2017). Ensuring that SETs are supported and retained will be crucial to ensure that the needs of students receiving special education services are being met in the post-pandemic era (Brandenburg et al., 2020).

Literature Review

Special Education Teachers' Stress

Decades of research have demonstrated that teaching has been – and continues to be – a stressful occupation which can impact educators' mental and physical health in negative ways (Greenglass & Burke, 1988; Kush et al., 2022; Kyriacou, 2001). Teacher stress may be defined as "the experience by a teacher of unpleasant, negative emotions, such as anger, tension, frustration, or depression, resulting from some aspect of work as a teacher" (Kyriacou, 2001, p. 28) and is closely linked to heightened rates of turnover, burnout, and workforce attrition (Harmsen et al., 2018; Schaufeli & Bakker, 2004).

Although SETs regularly experience great satisfaction and joy from their work (Fish & Stephens, 2010), many of those working in the field of special education have also reported relatively high rates of stress (Dewey et al., 2017; Lavian, 2015; McGrew et al., 2023). Due, in part, to these stress levels, SETs are vulnerable to burnout and exhaustion, which contribute to high rates of attrition and turnover (Brunsting et al., 2014; Carver-Thomas & Darling-Hammond, 2017). As a result, schools across the United States have long struggled to fill special education teaching positions (Boe, 2006; Mason-Williams et al., 2020). For instance, Billingsley & Bettini (2019), citing data from the National Coalition on Personnel Shortages in Special Education and Related Services, noted that 49 states in the United States report shortages of special educators. A recent survey from the National Center for Education Statistics found that "72% of public schools with vacancies in special education experienced difficulty filling the position with a fully certified teacher for the upcoming school year" (School Pulse Panel, 2024).

Factors identified as contributing to the stress and burnout of SETs include lack of support from administrators, overwhelming caseloads, and feelings of isolation from colleagues (Ansley et al., 2019; Billingsley & Bettini, 2019). Role ambiguity and role conflict – where educators lack clarity about their job responsibilities or where multiple job demands are incompatible with one another – have also been cited by researchers as important factors in the stress of SETs (Bettini et al., 2020; Wiśniewski & Gargiulo, 1997). Novice SETs also report higher burnout than their veteran colleagues (Bettini et al., 2017). SETs may also incur stress if they are not provided the adequate supports and resources needed to meet the unique needs of their students (Billingsley et al., 2020). Scholars have found, for instance, that SETs working with higher numbers of students with emotional or behavioral disturbances are more prone to burnout (Brunsting et al., 2023; Gilmour & Wehby, 2020). In addition, SETs who work in classrooms with students who have multiple disabilities or where students have a range of different disabilities may also incur higher rates of stress (Billingsley & Bettini, 2019; Kaff, 2004). As with their general education counterparts, SETs also cite increasing workloads, pressures from students' family members, and inadequate salary and job insecurity as sources of

stress and job dissatisfaction (Cancio et al., 2018; Hester et al., 2020). Lastly, the wider socio-political, cultural, and policy context can impact SETs' levels of stress (Bettini et al., in press). For instance, Bettini et al. (in press) note that changing teacher preparation programs, licensure processes, and shifts in views towards disabilities have all recently impacted SETs' working conditions and partnerships with their general education colleagues.

Educator Stress during a Pandemic

Evidence mounts that the pandemic was associated with a rise in educators' stress levels (Hirshberg et al., 2023; Kush et al., 2022; Ozamiz-Extebarria et al., 2021; Schiller et al., 2023). It has been documented that during periods of school closure, educators encountered a range of unfamiliar challenges as they were required to rapidly shift to remote instruction (Kim & Asbury, 2020; Klapproth et al., 2020). Many educators struggled to learn new technology needed for remote instruction and doubted their capacity to effectively teach students remotely (Ferren, 2021; Pressley & Ha, 2022). Other research indicated that educators worried about students' safety and wellbeing during the pandemic and often felt isolated from them (Herman et al., 2021). Lastly, educators reported unique challenges in their attempts to engage families during the pandemic, as such efforts often occurred amid community-school relations already strained by issues related to educational inequities, pandemic mandates, and polarizing curricular content debates (Hartney & Finger, 2022; Leo et al., 2024; Novianti & Garzia, 2020).

Research also suggests that SETs, in particular, were severely impacted by the pandemic due to the unique needs of the students they served (Marshall et al., 2020; O'Connor Bones et al., 2022). In a recent survey of 468 SETs across the U.S., 38.4% met clinical criteria for generalized anxiety disorder, a rate 12.4 times greater than the U.S. population; and 37.6% met the criteria for major depressive disorder, a rate 5.6 times greater than the population (Cormier et al., 2021). Similarly, a study conducted by McGrew et al. (2023) found that of nearly 500 SETs surveyed, 62% were classified as "severely burned out" (p. 1).

Like their general education counterparts, research has shown that many SETs reported a lack of control over their working conditions and experienced excessive worry, anxiety, and stress during the pandemic (Glessner & Johnson, 2020). SETs also felt constrained in their ability to implement best practices for their students and worried about meeting their needs, especially during school closures (Hirsch et al., 2022). A survey of 332 SETs, for example, reported a significant decrease in levels of efficacy and sense of school connectedness during periods of remote teaching (Womack & Montiero, 2023). Results from the American Educator Panels conducted in spring 2020 reported similar results: 30% of respondents reported difficulty receiving adequate support for their students with "mild or moderate" disabilities. For students with "severe" disabilities, this number was nearly one half (Hamilton et al., 2020). And a survey of 744 school districts across the country conducted by the American Institutes for Research (Jackson & Bowdon, 2020) found that over half reported challenges complying with the Individuals with Disabilities Education Act (IDEA). These challenges were even more severe in districts with higher proportions of economically disadvantaged students (Jackson & Bowdon, 2020).

While some research described how SETs made adaptations such as conducting Individualized Education Plans (IEP) meetings virtually (Jenkins & Walker, 2021), remote learning arrangements made it particularly difficult for SETs to meet the needs of their students. As a United Nations Policy Brief states, children with special needs were the "least likely to benefit" from remote learning (2020, p. 12). Researchers note that online learning environments

cannot provide the structured routines of a classroom that are most beneficial for students with special needs (Hurwitz et al., 2022; Pozas & Letzel-Alt, 2023; Smith, 2020). Moreover, assessments used to identify students with special needs and measure their academic progress are not validated for virtual use (Hass & Leung, 2021). As schools shifted to online learning, families of children with special needs became responsible for assisting or leading their education; a task for which they were often unprepared and underequipped (Asaro-Saddler et al., 2023; Navas et al., 2022). These new duties were more challenging for families already struggling economically and for caregivers who continued to work full-time during quarantine (Kantamneni, 2020).

School closures also meant that students with special needs could not regularly access professional services and specialized equipment (Greenway & Eaton-Thomas, 2020). As students with special needs are disproportionately likely to be economically disadvantaged, building closures also meant that many students with special needs experienced food insecurity as they could not access school lunches (Brandenburg et al., 2020).

Conceptual Framework

Job Demands-Resources Model (J-DR)

This study utilizes the J-DR model (Bakker & Demerouti, 2007; Demerouti et al., 2001) to investigate SETs' experiences of stress and support during the COVID-19 pandemic. The J-DR model focuses on the relationship between the demands workers face at their jobs and the resources on which they may draw to successfully accomplish work-related tasks. When demands outweigh resources, employees are more likely to experience burnout and exhaustion as well as a range of negative mental and physical health-related impacts (Demerouti et al., 2001).

According to this framework, job demands are defined as "physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs" (Bakker & Demerouti, 2007, p. 312). Bakker & Demerouti (2007) define job resources as "those physical, social or organizational aspects of the job that may do any of the following: (a) be functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; (c) stimulate personal growth and development" (p. 312).

These two fundamental concepts (i.e., job demands and job resources) are purposely conceived broadly as the model is meant to encompass a range of demands and resources, aspects which can differ greatly depending on the circumstances of the profession and job context. For instance, resources might be operationalized as job control, social support, financial rewards, career opportunities, or positive feedback from superiors (Schaufeli, 2017; Siergrist, 1996). To further investigate potential buffering effects of varied resources, Xanthopoulou et al. (2009) suggested additional personal resources and characteristics to the model. These resources might include self-efficacy, optimism, and self-esteem.

Two basic outcomes are associated with the interactions of job demands and resources. In a context where job demands are excessive and resources are lacking, workers will incur stress which can lead to negative impacts not only on the worker in the form of burnout, exhaustion, and other health problems, but also for the organization as well (Bakker & Demerouti, 2007). In contrast, workers who are provided with more abundant resources can withstand more of the negative impacts of job demands on their psychosocial wellbeing (Bottiani et al., 2019). Such

situations may also increase motivation and work engagement among workers which can lead to longer organizational commitment and improved work performance (Taris & Schaufeli, 2016).

Through the lens of the JD-R model, this study investigates the experiences of stress incurred by special education and general education teachers as well as their perceptions of demands and resources provided to them. The following research questions guided this analysis:

1. How do SETs' reported levels of work-related stress during the pandemic in relation to perceived demands and resources compare with their general education counterparts?
2. How do SETs characterize their experiences of stress, job demands, and the availability of resources?

Methods

Data Collection

This research is drawn from a mixed-methods study (involving statistical analysis of survey data and qualitative analysis of open-ended responses) exploring workplace stress and job satisfaction disparities among teachers working in schools serving different subpopulations of students (i.e., ethnically, linguistically, and socioeconomically) and in different types of communities (i.e., urban, suburban, rural) across New York State during the COVID-19 pandemic[1] (Wilcox et al., 2022).

After Institutional Review Board (IRB) approval was granted by the University at Albany (SUNY) (approval number 21E027), data collection began in April 2021 using a Qualtrics survey of instructional and support staff in schools throughout New York State. The survey questions were developed by an interdisciplinary research team, with some questions derived from other validated survey instruments and research on employee turnover (Bothma & Roodt, 2013).

The survey questions (see Appendix A) focused on understanding how the COVID-19 pandemic impacted educators' lives including stress, intent to leave their job, available resources and supports, and changes to work-life balance. Specifically, a range of Likert scale items prompted educators to disclose how frequently they experienced feelings of stress and negative emotions due to their experiences in schools during the pandemic. The survey also asked respondents to indicate their perception of resources and supports available to them through the pandemic. The final, open-ended question asked: "Please provide any comments you would like about stress, your job satisfaction, or your perceptions of the effects of the pandemic on your life and work as an educator."

After several rounds of survey recruitment over the period from March-June 2021, we had collected 904 survey responses from teachers and support staff who worked in 38 different schools with an overall educator response rate of 33.1%. While the sample is not representative of all educators in New York State (as we discuss in more detail in the limitations section), our team was able to compare the responses of special education and general education teachers from whom we received responses. Table 1 presents general demographic information about sample schools.

[1] A full report on the methods and procedures used for this research is available on the researchers' website: https://ny-kids.org/wp-content/uploads/2022/02/nykids.covid_.study_.methods.FINAL_.pdf

Table 1
Demographic Information about Sample Schools[2]

Teacher Role	Number of schools	Economically disadvantaged	White	Hispanic/ Latino	African American/ Black	English language learners
General education Teacher (GET) only	10	36%	83%	5%	3%	3%
Special education teacher and GET	28	34%	78%	7%	4%	3%
New York State average	N/A	57%	41%	28%	16%	10%

Out of 38 participating schools, 28 schools had special education teachers who responded to our survey. Participating **s**chools were located in 15 counties and communities ranging from distant rural areas to small cities.

Data analysis

Survey responses among 419 teachers (75 special education and 344 general education teachers) were downloaded from Qualtrics and analyzed in SPSS (IBM, 2020). First, the research team created and maintained a directory that included a copy of the survey and codebook. The research team then prepared raw data for analysis using school identifier variables, and codes were run to check for missing values. Each set of research questions required different analytic strategies so that, for each analysis, syntax was annotated to indicate author, date, and purpose of analysis. Robustness checks were also employed, such as Cronbach's alpha for internal consistency.

Six scales were initially constructed to reflect educators' negative feelings about their jobs such that higher values indicated greater stress and lower job satisfaction, which are described in Table 2, along with summary statistics and bivariate pairwise correlations. Two of these scales corresponded to the JD-R framework and were used for this analysis[3]: 1) the contextual stressors, demands, and challenges when interacting with students and parents (labeled "Demands and stressors"); 2) resources and supports indicating the educators' capabilities to respond to the challenging context due to COVID-19 (labeled "Resources and supports"). The remaining scales refer to educators' perceived experiences about stress, intent to leave their job, and work-life balance.

[2] Demographic data refers to the 2020-2021 schoolyear when our survey was administered.
[3] See Appendix for descriptive statistics and survey items used for this analysis.

Table 2

Summary Statistics and Bivariate Correlations

	1	2	3	4	5	6	7	8	9	10	11
(1) Work stress											
(2) COVID stress	0.56***										
(3) Demands and stressors	0.46***	0.33***									
(4) Resources and supports	-0.50***	-0.32***	-0.23***								
(5) Intend to leave before COVID	0.10**	0.02	0.01	-0.16***							
(6) Intend to leave during COVID	0.59***	0.29***	0.29***	-0.50***	0.46***						
(7) Work-life balance	0.56***	0.74***	0.33***	-0.31***	-0.04	0.32***					
(8) % of economically disadvantaged students	0.05	-0.07	-0.02	-0.04	-0.04	0.01	0.00				
(9) Special education teacher	-0.08	-0.07	-0.13***	0.17***	0.02	-0.03	-0.08	0.02			
(10) General education teacher	0.08	0.07	0.13***	-0.17***	-0.02	0.03	0.08	-0.02	-1		
(11) Educator gender	0.17***	0.11**	0.02	-0.13***	-0.17***	0.02	0.10**	0.07	0.06	-0.06	
Cronbach's Alpha (95% C.I.)	.99 (.98, .99)	.67 (.64, .71)	.63 (.60, .67)	.72 (.69, .75)	.69 (.65, .73)	.77 (.74, 80)					
Omega (95% C.I.)	.99 (.98, .99)	.69 (.66, .73)	.64 (.60, .68)	.73 (.70, .76)	.66 (.62, .70)	.74 (.72, .77)					
Mean	3.12	2.59	3.84	3.07	0.90	1.92	2.61	34.43	0.18	0.82	0.83
SD	0.79	0.45	0.65	0.76	0.80	1.28	0.70	17.59	0.38	0.38	0.38

Note. Gender was transformed to a dichotomous variable representing Females as 1 and Males as 0. Special education teacher and general education teacher variables were transformed into a dichotomous variable to indicate each role. ***p<.001 **p<.01 *p<.0

Dependent variables: the scales (from 1 to 7) reported in Table 2 are our dependent variables, for which we measured the differences between special education and general education teachers. These variables capture the educators' perceptions of how the COVID pandemic impacted them.

Independent variable: a dummy variable equal to 1 when the educator is a special education teacher and equal to 0 when the educator is a general education teacher.

We compared the dependent variables between special education teachers and general education teachers by estimating equation (1).

$y_{ts} = \beta_1 + \beta_2 \cdot x_{ts} + \varepsilon_{ts}$ (1) Where y_{ts} is the dependent variable *y* for the educator *t* in school *s;* x_{ts} is the independent dummy variable indicating whether the educator *t* in school *s* is a special education teacher; ε_{ts} is the error component; given the specification used in equation (1), $\beta_1$indicates the mean of the dependent variable *y* for general education teachers and β_2 represents the average difference between the special education teachers in comparison to general education teachers. Our analyses explore whether β_2 is statistically significant for our six scales.

Because of the two-stage sample design (first schools and later educators), we used Complex Samples General Linear Modeling (CSGLM) in SPSS to adjust standard errors for heterogeneity due to educators being clustered within schools, when estimating equation (1). To

adjust for the cluster sample design, standard errors generated for this analysis used clustering options to compute the variance-covariance matrix. This ensured that educators were not independently sampled. Hence, we ran regressions clustering by school level to capture heterogeneity across schools.

Among the SETs who responded to the survey, 31 left responses to the final, open-ended question. The open-ended survey responses were analyzed using computer-assisted qualitative data analysis software (NVivo 12). Coders used an inductive constant-comparison approach (where each interpretation of data is compared with existing interpretations as they emerge) (Charmaz, 2006) to develop a codebook that included eight "parent codes" focused on the major lines of inquiry: academic progress; adaptations; collaboration; community; job satisfaction; leadership; social-emotional well-being; stress. During the coding process, another 29 related child codes were created. The research team then used methods of code comparison across schools (e.g., axial coding) (Saldaña, 2021) and used recommended strategies to reduce credibility threats inherent in qualitative studies (Miles, Huberman, & Saldaña, 2020), including triangulation across data sources and interpretive memoing (i.e., reflecting on interpretations with intent to account for any over- or under-weighting of evidence).

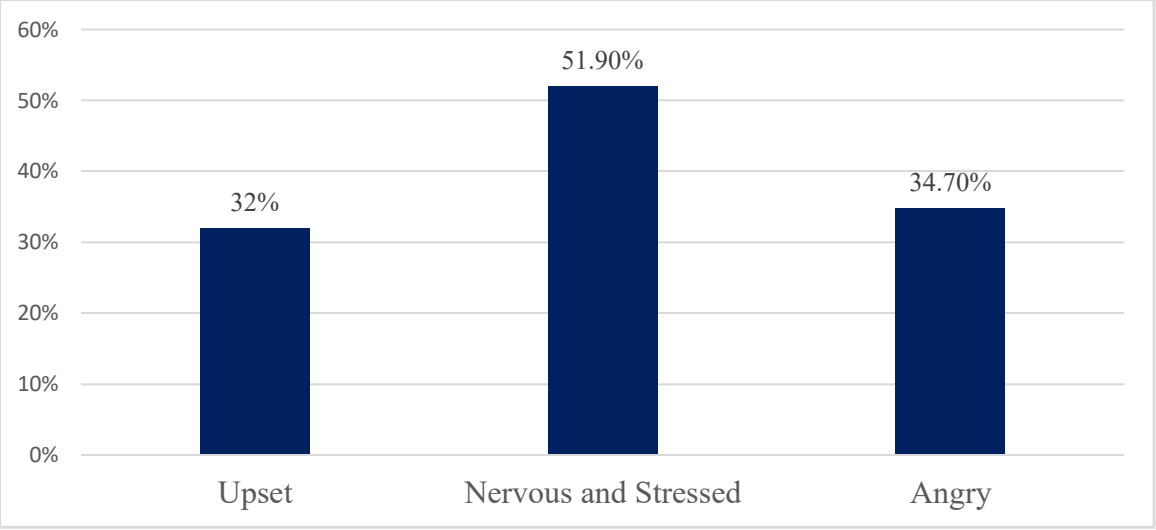
Findings

Indication of Stress Experienced by All Educators

Survey data demonstrated that all educators in this study experienced stress and negative emotional experiences (e.g., anger) during the pandemic. In an analysis of the total responses of both special education and general education teachers (n=419), participants reported high levels of stress as well as accompanying negative emotions such as anger and nervousness. For instance, as shown in Figure 1, nearly a third of survey respondents (32%) felt "upset" fairly/very often due to unexpected changes at work. Over half of all respondents (51.9%) reported feeling "nervous and stressed about work" fairly/very often. Lastly, over a third of participants (34.7%) educators reported feeling angry fairly/very often.

Figure 1

Educators' Stress during the Pandemic (Fairly/Very Often)



Stress Levels of Special Education and General Education Teachers

With regard to our first research question, data indicated that SETs, in particular, fared better than general education classroom teachers**,** a finding which contrasts with expectations based on prior research of SETs' experiences of stress in the workplace (e.g., Dewey et al., 2017; Lazarus, 2006) and during the pandemic (Cormier et al., 2021; Glessner & Johnson, 2020; McGrew et al., 2023). Table 3 presents the results of the data analysis by differences in educator role, where the third column indicates the differences observed between SET and general education teachers (β_2 as indicated in equation (1)). The dependent variables used for these analyses were standardized to simplify the description of the differences observed.

Table 3

Differences in Reported Stress Level by Teacher Role

Independent variable	Constant/General education teacher (β_1)	Special education teacher dummy (β_2)	Obs.	R^2
(1) Work stress	0.205***	-0.187**	419	0.006
	(0.056)	(0.078)		
(2) COVID stress	0.067	-0.172*	419	0.005
	(0.042)	(0.098)		
(3) Demands and stressors	0.117**	-0.349***	419	0.018
	(0.051)	(0.100)		
(4) Resources and supports	-0.207***	0.468***	419	0.030
	(0.058)	(0.074)		
(5) Intend to leave before COVID	-0.062	0.057	417	0.001
	(0.048)	(0.087)		
(6) Intend to leave during COVID	0.091*	-0.084	418	0.001
	(0.055)	(0.076)		
(7) Work-life balance	0.176***	-0.189**	419	0.006
	(0.038)	(0.094)		

Notes. All variables used are standardized, except the dummy variable special education teacher role. ***p<0.001, **p<0.05, *p<0.1. Standard errors in parentheses were computed clustering by school. See Appendix A for the scales description.

The results above show that SETs reported lower work stress (0.187 SD) and COVID-related stress (0.172 SD) than general education teachers. Results also indicate that SETs reported experiencing fewer challenges balancing work and life (0.189 SD) compared to their general education colleagues. These results contrast with research suggesting that teachers of

students who had unique teaching needs (such as those with special needs) were impacted more severely than other educator groups (Cormier et al., 2021; Hester et al., 2020; O'Connor Bones et al., 2022).

Second, our findings show that SETs reported lower demands and stressors (0.349 SD) and perceived greater levels of resources and supports compared to general education teachers (0.468 SD). We also found a negative correlation (-0.23, see Table 2) between educators' perceptions of school resources/supports and stress-related responses (resources and supports index), meaning that educators' work stress declined when their perception of available school supports increased and vice versa. As hypothesized by the theoretical framework employed in this study (Bakker & Demerouti, 2007; Demerouti et al., 2001), the perception of abundant resources at schools is related to a decline in educators' negative emotional responses and stress levels. For SETs, this equated to lower levels of stress than their general education counterparts.

Open-ended Responses: Special Education Teachers

In response to our second research question, open-ended responses left by SETs elaborated on the challenges they faced during the pandemic and the resulting stress they experienced. Several responses, though limited, also noted the significance of available supports and resources in mitigating their stress levels during the pandemic. The data presented below are important reminders that, although statistical analyses found that SETs reported overall less stress than their general education counterparts, they nonetheless experienced stressful conditions during the pandemic. One teacher, for instance, explained the "juggling act" of instructional adaptation and emotional demands put upon her:

> Every day, more and more responsibilities have been given to me at my job. My job was already a juggling act due to students' disabilities and needs. I am constantly trying to support students in front of me and those online. I'm trying to address their mental health, create engaging lessons, keep everyone safe while my support staff keeps getting pulled for other things. I keep getting told to change, do this more, add this to my list but no one has stopped to ask how we are doing. I come to work every day two hours early and do work all weekend. Still I feel as if I am drowning.

Several SET responses highlighted the emotional demands they encountered during the transition to remote teaching that left them feeling inadequate to meet students' needs. "So many of my students I feel are being left behind during hybrid learning. There is not enough time in the day to meet their needs," said one teacher. Summing up themes related to the array of emotional demands SETs experienced, one remarked:

> Many of my students are suffering from emotional stress, anxiety, depression and lack of motivation. They miss when school was in person every day and they were able to interact with their friends and their teachers in person.

Another SET explained the particular difficulties that students with special needs may have experienced during periods of remote learning when resources for delivery of instruction were not adequate (O'Connor Bones et al., 2022; Pozas & Letzel-Alt, 2023):

> Also many students, especially those students who need special education support, suffer with the new style of teaching/learning. They can't navigate through multiple sights [sic] that teachers list for them to read or watch a video of something and then answer the

> questions. Those that have reading difficulties get frustrated very easily with assignments that have to be completed this way. Many students who receive special support services aren't getting it.

Even for those teaching in person, social distancing mandates created challenges for SETs to engage their students and utilize resources and best teaching practices they had prior to the pandemic As one SET wrote, "We teach differently because of COVID and social distancing, which makes everything less fun." Speaking to resource constraints specifically, another SET felt that "many tools we used in the past for educating students as well as classroom management are not available to us now with social distancing and for sanitary reasons (not moving student seats as they stay in same seat throughout day)." Similarly, one SET described the challenges of social distancing and constraints on using often taken-for-granted resources of physical expression had on their ability to teach effectively:

> Wearing a mask all day long while teaching is the worst part of my entire day. It is hard to understand my students, physically uncomfortable, and makes it hard to communicate. I cannot wait until I no longer have to do this. Also 6 feet distance makes it very hard to work with students and teach them. I have to be able to see their papers as we work!

As students returned to school, several respondents observed behavioral and academic changes among their students that had developed during the pandemic and school closures. "The students are stressed and release that stress in the classroom. They are unmotivated and mentally distressed," said one SET.

As a result, many respondents described feelings of burnout, exhaustion, and intentions to leave the profession. A SET described the negative impacts of the pandemic on their levels of job satisfaction and work-life balance:

> I am no longer as excited about going to work each day than I was prior to the pandemic and feel that each day contains an unexpected surprise that affects my day to day routine. I find it difficult to disconnect from work when I leave for the day and carry on with my personal life unaffected. This just doesn't happen anymore.

Another SET wrote, "This job has become so overwhelming and stressful that I'm looking at retirement options for the end of next year and exploring other careers." Likewise, a SET expressed the difficulties of teaching the during the pandemic yet also noted some insights they had gained through the process:

> I love my job and at the same time, this has been the most exhausting year in all of the years of my teaching. The pandemic has impacted my energy level once I get home. This has also opened our eyes, as educators, to changes that can be made to how we teach!

Though infrequent, several responses highlighted the ways that supports and resources mitigated their stress during the pandemic. In particular, several responses highlighted the role that administrators played during the pandemic in supporting SETs. For example, one participant described changing schools during the pandemic due to a lack of perceived support by administration:

> I switched schools in the Fall of 2020 (after 6 years, forfeiting tenure as well) because I was not confident in the administration of my previous school to handle the new COVID manner of teaching. I am now at my new school where I am extremely happy and

> satisfied with the means in which COVID was handled throughout the school year. I am in year 1 of tenure track and took a slight pay cut, but my life changed for the better due to this decision.

Another SET recounted their appreciation for district leadership in handling the pandemic:

> I have felt extremely fortunate to work in a district that has worked as hard as [name redacted] has to create the best possible (and safest) learning environment for all students and staff. In the overall pandemic plan, I have felt that our district has made important accommodations for my special needs students. It has not been easy or perfect.

Discussion

This mixed-methods study examined the reported stress levels and relationships of stress levels to job demands and resources among SETs and their general education colleagues in K-12 schools in New York State.

As predicted by the JD-R model, educators' reported levels of stress were higher when resources at their disposal were outweighed by job demands (Bakker & Demerouti, 2007). Despite research (e.g., Cormier et al., 2021; Glessner & Johnson, 2020; McGrew et al., 2023) noting SETs' relatively high levels of stress, burnout, and attrition during the pandemic, we found that SETs in this study – as compared to their general education counterparts – reported lower levels of stress and more favorable assessments of the balance between their job demands and resources available to them.

While it is seemingly good news that SETs in this study reported lower levels of stress than their general education counterparts, it is crucial to remember that these educators still experienced stress and negative emotions (see Figure 1). Qualitative data further demonstrated the unique challenges and stressors faced by SETs in this study, indicating the significant emotional toll pandemic-related disruptions took on their professional and personal lives. Overall, this evidence indicates that additional efforts must continue to be made to support SETs to prevent burnout and attrition.

Several insights related to the increasing teacher attrition rates facing districts across the U.S. may also be drawn from this data. For instance, most teachers who quit during the pandemic cited stress as the driving factor in their decision, followed by a dislike for the way things were run at their school (Diliberti et al., 2020). As our study also demonstrates, perceptions of support and resources can help mitigate the impact of stress and, in turn, could help stem increasing rates of teacher burnout and attrition (Marshall et al., 2022). Working conditions, in particular, are an important factor that impacts the stress levels and job satisfaction of SETs (Billingsley et al., 2020; Stark et al., 2023). Ultimately, negative impacts on teachers can increase attrition and turnover levels, thus impeding districts from adequately staffing schools, which can in turn increase the stress levels and reduce the effectiveness of SETs who remain in the field (Brunsting et al., 2014; Carver-Thomas & Darling-Hammond, 2017).

Additional research can further explore the particular job supports and resources that teachers found to be most crucial during the pandemic. Such research can build on this study as well as other scholarship noting the positive impacts of professional development, mentorship, and mindfulness programs to mitigate educators' stress levels (Herman et al., 2021; Jakubowski & Sitko-Dominik, 2021; Woulfin & Allen, 2021). Scholars must also consider the significance of job insecurity, budgetary constraints, and inadequate time to meet job demands on teacher stress (McCarthy et al., 2022). How school and district leaders approach matching resources to

educator job demands during crisis conditions is another important area for further inquiry, as the COVID-19 pandemic is not likely to be the last major disruption to schools (Wilcox et al., 2024).

In this post-pandemic moment, it will be crucial to continue supporting SETs to prevent turnover and ensure that the needs of students receiving special education services are being met (Brandenburg et al., 2020). As Woulfin & Jones (2023) note, the challenges of the pandemic have both revealed inequities facing students receiving special education services and provided policymakers and educational leaders with the opportunity to refocus their efforts on meeting the needs of SETs and the students they serve.

Limitations

Several limitations are important to note about this study. For one, due to space limitations, our survey was unable to inquire into which particular supports were most valued. Open-ended responses, however, did provide partial insights into this issue, such as when respondents explained how supportive and empathetic administrators provided them with crucial support during the pandemic (Hidalgo-Andrade, 2021). Second, our sample was meant to capture a range of educators' experiences during the pandemic; however, the participants in this study were overwhelmingly situated in rural and suburban communities and were White— a demographic more homogenous than New York State's teaching workforce (of which 80% are White). To better understand the racialized impacts of the pandemic, more research is needed to uncover the diverse experiences of teachers working in urban districts and teachers of color (Baker et al., 2021). Lastly, the schools in this study served student populations with lower average levels of economic disadvantage (a poverty indicator) than the state as a whole (56%) (New York State Education Department, 2023). This difference is crucial as prior research has noted the additional challenges faced by students, families, and educators in high-poverty schools and districts (Bottiani et al., 2019; Elliot et al., 2023). It is possible that this demographic variable impacted the reported stress levels of educators in this study, although statistical analyses showed that there were no differences in reported stress levels between SETs and general education teachers serving schools with different levels of student economic disadvantage. Nonetheless, the significant overlap between poverty and disability is notable in New York State (Office of Budget Policy and Analysis, 2022).

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Appendix

Scales information

Scale	Source and Coding
Work stress	Question: '*Thinking about your work in a school, please describe how often in the last month you have experienced the following:*' . I have been upset because of something that happened unexpectedly at work. . *I have felt that I was unable to control important things related to my job.* . *I have felt nervous and 'stressed' about work.* . *I have felt that things were going my way at work.* (**Reverse item**). . *I have felt that I could not cope with new aspects of my job.* . *I have felt that work-related stress has impacted my personal life.* . *I have felt that I am on top of things at work. (***Reverse item**)

	. I have been angry because of work-related problems that were outside of my control. *. I have felt that work-related difficulties were piling up so high that I could not overcome them.*
	Choices were: *Never, Almost Never, Sometimes, Fairly Often, Very Often*. Dummy variables were created for each choice (equals 1 if never, equals 2 if almost never, equals 3 if sometimes, equals 4 if fairly often equals 5 if very often). The index was computed as the mean of the individual items.
Demands and stressors	Question: '*In the context of this school year, to what extent do you agree with the following statements?:*'
	. I have had difficulties communicating with some students' parents and caregivers. *. I have had to find new strategies to engage students.* *. I have had students struggle with mental health challenges.* *. My students' mental health challenges have affected my mental health.*
	Choices were: S*trongly disagree, Disagree, Neither agree or disagree, Agree, Strongly agree*. Dummy variables were created for each choice (equals 1 if strongly disagree, equals 2 if disagree, equals 3 if neither agree or disagree, equals 4 if agree, equals 5 if strongly agree). The index was computed as the mean of the individual items.
Resources and supports	Question: '*In the context of this school year, to what extent do you agree with the following statements?:*'
	. I have had opportunities to weigh in on decisions impacting my work. *. I have been able to get help for students about whom I am concerned.* *. I have had students receive the support and resources they need to learn while they are working remotely.* *. I have been provided the support and resources I need to engage students with different needs while they are working remotely.*
	Choices were: *Strongly disagree, Disagree, Neither agree or disagree, Agree, Strongly agree*. Dummy variables were created for each choice (equals 1 if strongly disagree, equals 2 if disagree, equals 3 if neither agree or disagree, equals 4 if agree, equals 5 if strongly agree). The index was computed as the mean of the individual items.

Intent to leave before COVID	Question: '*Prior to the pandemic (before March 2020), how often did you feel the following ?*' . *I found my job personally fulfilling.* . *I shared what I learned from my teaching experiences.* ***(Reverse item)*** . *I dreamt about a better paying job.* . *I looked forward to another day at work.* . *I had considered leaving my job.* ***(Reverse item)*** Choices were: *Never, Every couple of months, Once a month, Every couple of weeks, Every week, Every day*. Dummy variables were created for each choice (equals 0 if never, equals 5 if every couple of months, equals 4 if once a month, equals 3 if every couple of weeks, equals 2 if every week, equals 1 if every day). The index was computed as the mean of the individual items.
Intent to leave during COVID	Question: '*Thinking about changes in your job due to the pandemic (since March 2020), how often have you felt the following?*' . *I found my job personally fulfilling.* . *I shared what I learned from my teaching experiences.* ***(Reverse item)*** . *I dreamt about a better paying job.* . *I looked forward to another day at work.* . *I had considered leaving my job.* ***(Reverse item)*** Choices were: *Never, Every couple of months, Once a month, Every couple of weeks, Every week, Every day. Dummy variables were created for each choice (equals 0 if never, equals 5 if every couple of months, equals 4 if once a month, equals 3 if every couple of weeks, equals 2 if every week, equals 1 if every day). The index was computed as the mean of the individual items.*
COVID stress	Question: '*For each of the following, rate how much the pandemic has changed your life:*' . *Routines.* . *Family Income/Employment.*

	. *Access to personal social supports.* . *Experiences of stress related to COVID-19 pandemic.* . *Balancing work and personal/family life.*
	Choices were: *No change, Mild. Small change; able to meet all needs and pay bills, Moderate. Having to make cuts but able to meet basic needs and pay bills, Severe*. Unable to meet basic needs and pay bills. Dummy variables were created for each choice (equals 1 if no change, equals 2 if mild, equals 3 if moderate, equals 4 if severe). The index was computed as the mean of the individual items.
Work-life balance	Question: '*For each of the following, rate how much the pandemic has changed your life*:'
	. *Balancing work and personal/family life.*
	Choices were: *No change, Mild. Small change; able to meet all needs and pay bills, Moderate. Having to make cuts but able to meet basic needs and pay bills, Severe*. Unable to meet basic needs and pay bills. Dummy variables were created for each choice (equals 1 if no change, equals 2 if mild, equals 3 if moderate, equals 4 if severe).

Note. Intent to leave scales are based on (Bothma & Roodt, 2013); the rest of the scales are based on (Wilcox et al., 2022).

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