A Longitudinal Mixed Methods Investigation of Special Educator Stress in the Northwest Region of the United States

Christen Knowles[1]
Katherine W. Bromley[2]
James Sinclair[3]
David Lahna[4]
Paulina Whitehat[5]
Erin Kinavey-Wennerstrom[6]
Alexander Stevens[7]
John R. Seeley[8]

Abstract
Special education teachers provide individualized support for students with disabilities appropriately and equitably to access the opportunity to learn. Unfortunately, research indicates special educators are at a greater risk of burnout compared to their general education counterparts. To understand better the lived experience of special educators, we implemented a longitudinal convergent mixed methods research design that took place across 2 school years and involved 18 special education teachers providing services in the Northwest region of the United States. Objectives of the study were (a) to examine the longitudinal dynamics of special educators' work experiences, both positive and stressful aspects, (b) to identify and to analyze the key sources contributing to special educators' reported positive and stressful experiences, and (c) to compare quantitative measures of stress and burnout with qualitative insights. Qualitative findings indicated an overextended workload and lack of social support from administration was commonly reported, while working with students with disabilities often was a source of satisfaction. Quantitative findings identified low aggregated scores of cynicism/depersonalization compared to typical teacher samples (i.e., general education teachers). Across time, there was no significant change of measures of burnout or stress. Convergence of qualitative and quantitative data suggests commonly used quantitative measures in this paradigm might not capture the unique experiences of special education teachers. According to findings, future research should continue to investigate effective ways to measure stress and burnout for special education teachers. In addition, more

[1] Associate Director, College of Education, University of Oregon, e-mail: cknowles@uoregon.edu, ORCID: https://orcid.org/0000-0003-0073-3100
[2] University of Oregon and Oregon Health and Sciences University, e-mail, kbromley@uoregon.edu, ORCID: https://orcid.org/0000-0002-4800-4356
[3] University of Oregon and Oregon Health and Sciences University, e-mail, jamesin@uoregon.edu , ORCID iD: 0000-0003-2019-6103
[4] University of Oregon and Oregon Health and Sciences University, e-mail, lahnad@ohsu.edu, ORCID iD: 0000-0002-8113-825X
[5] University of Oregon and Oregon Health and Sciences University, e-mail: paulinaw@uoregon.edu, ORCID: https://orcid.org/0000-0002-0044-888X
[6] University of Oregon and Oregon Health and Sciences University, e-mail: ekinavey@uoregon.edu, ORCID: https://orcid.org/0000-0002-0459-1587
[7] University of Oregon and Oregon Health and Sciences University, e-mail: stevenal@ohsu.edu, ORCID: https://orcid.org/0000-0002-5718-9161
[8] University of Oregon and Oregon Health and Sciences University, jseeley@uoregon.edu, ORCID: https://orcid.org/0000-0002-5320-7510

research is needed to understand how perceived social support from school and district administrators might mitigate experience of stress of special education teachers.

Keywords: *teacher stress, burnout, special education, mixed methods, social support*

Introduction

Educators have a profound influence on the school-based experience of children and youth. In U.S. public education, there are more than three million general educators and just under 350,000 special educators (U.S. Department of Labor Statistics, 2023). Elevated experiences of stress that leads to burnout are strong predictors of educators leaving the field, incurring costs in the estimated millions, if not billions, of dollars annually (Synar & Maiden, 2012). Although efforts are underway to identify strategies to promote retention, the shortage of qualified educational professionals, in particular special education teachers, continues to be a pervasive crisis without any viable solutions visible on the horizon. In addition, early research demonstrated that the experience of burnout is an immediate precursor to teacher attrition (Goddard & Goddard, 2006; Lavian, 2012). Strategies to improve teacher retention is arguably a national priority.

The COVID-19 pandemic shook-up educational programming at a global scale and presented never-before-seen challenges, challenges upon which the impacts on educational outcomes will unfold for years to come. Early research indicated that approximately one year into the pandemic, approximately 25% of all U.S. educators indicated a desire to leave their jobs at the end of the 2020-2021 school year, compared with an average national *pre-pandemic* rate of approximately 16% (McFarland et al., 2019; Steiner & Woo, 2021).

According to the Institute of Education Sciences (IES) *School Pulse Panel Report*, in the 2021-2022 school year (i.e., first full year following the COVID-19 pandemic), 62% of schools reported a general concern regarding vacant positions and the largest vacancy was for special education teacher positions (47%). In the 2022-2023 school year, special education teachers were reported as the most understaffed position by 65% of schools from this national sample. In addition, research identified that approximately 88% of public schools reported concerns related to staffing due to *burnout*, which was the most highly reported concern (Institute for Education Sciences, 2023).

High attrition rates have expansive negative impacts on our students and schools, including reduced programmatic offerings and quality, filling positions with inexperienced or unlicensed educators, and increased class sizes, to name a few (Carver-Thomas & Darling-Hammond, 2019). These negative impacts are particularly disruptive for specialization areas, including special education, which positions students with disabilities to experience a greater achievement gap due to inequitable service delivery. The purpose of special education is to provide equitable education for students with disabilities as stipulated by the Individuals with Disabilities Education Act (IDEA), federal law that guarantees free and appropriate public education (FAPE) for students with disabilities. A shortage of qualified special education teachers is an important issue of equity

within the U.S. education system and research understanding how stress and burnout contribute to these shortages is critical.

Conceptualizations of Stress and Burnout

Stress is both a physiological and psychosocial experience influenced by social interrelations within a naturally nested and collaborative environment. Burnout is commonly conceptualized as chronic stress that impedes upon one's ability to mitigate negative impacts through coping or resilience. There are a variety of theories to conceptualize burnout for human-service oriented professionals, including Conservation of Resource Theory, which asserts one's personal resources (i.e., time, cognitive attention, and physical energy) for completing a task must be replenished to avoid stress (Hobfoll & Schumm, 2009). Within this theory, burnout occurs when there is perceived loss of required skills (i.e., energy) amongst increasing job demands. The Dual Factor Model of Mental Health suggests positive mental health exists in both the presence of well-being and in the absence of impacted functioning (DFM; Greenspoon & Saklofske, 2001). Research implements combinations of the two factors for mental health profiles within youth populations. The Person-Environment-Occupation Fit Model, which emphasizes personal interactions within the occupational context is related to promoting or inhibiting positive outcomes (PEOF; Jansen & Kristof-Brown, 2006). In education, the implementation of the PEOF framework emphasizes individual strengths (i.e., teaching skills) and environmental contexts (i.e., district, school, classroom) to understand how the environment influences functioning and work-related outcomes. Although these theories have been applied in educational research to varying degrees, understanding exactly how stress transforms into the experience of burnout for educators remains unclear, leading to the need for further investigation.

Early research (e.g., Maslach & Jackson, 1981) identified three factors of burnout, which comprise exhaustion (i.e., feeling depleted, lack of energy for responsibilities), cynicism (i.e., detached, depersonalized, negative attitude), and professional efficacy (i.e., belief in one's ability to do good work), recently conceptualized as a *burnout cascade*. Jennings and Greenberg (2009) discussed that a burnout cascade can occur when an educator is overextended or lacks resources, which negatively impacts the classroom climate and leads to feelings of emotional exhaustion. Within such a state, a teacher is at risk for becoming cynical (i.e., depersonalization), which evolves into the individual lacking feelings of professional accomplishment. In fact, researchers from occupational health psychology have identified that prolonged feelings of cynicism and lack of professional efficacy are factors that differentiate stress from burnout (e.g., Bakker et al., 2008).

Influence on Educators and Students

For educators, researchers have identified that stress is associated with low job satisfaction and can have a negative impact on fidelity of implementation of positive and effective teaching practices (Reinke et al., 2013). Additionally, burnout is associated with an increased likelihood of mental health challenges (i.e., anxiety and depression) and physiological impacts (i.e., high blood pressure, disease; Roeser et al., 2013). Educator stress also can infiltrate into the student experience, with elevated educator stress associated with classroom-level increases of student

behavioral challenges (Jennings & Greenberg, 2009), which creates a transactional cycle of dysregulated students and adults. In a recent study by Herman et al. (2018), almost all educators reported high feelings of occupational stress paired with low coping, which is associated with the poorest student outcomes. Another review identified that teacher ratings of burnout also might be associated with student academic achievement (Madigan & Kim, 2021) and elevated student morning cortisol levels (Oberle & Schonert-Reichl, 2016). Some approaches to mitigate the influence of stress include interventions utilizing a cognitive behavioral framework, mindfulness (e.g., Roeser et al., 2013), and psychoeducational and social support. Unfortunately, findings from a recent meta-analysis suggest that many interventions produce relatively small effects and are not tailored to educator specific stress models or differentiated for unique stressors based on context, including special education (Iancu et al., 2017).

Influence on Special Education Teachers

There are considerable differences in the roles and responsibilities between general and special education teachers; therefore, research should not aggregate these adjacent but unique professions. Special educators are identified to have a greater risk of burnout compared to their general education counterparts with some pre-pandemic estimates of an annual attrition rate of 30% (Conley & You, 2017). Although there is no one-factor solution, these attrition rates are due to the fact that special educators arguably have one of the most challenging positions in education due to a variety of factors, including the following: elevated student learning or behavioral needs (Lambert et al., 2009), paperwork and legal documentation, designing and modifying materials, managing assistants, high levels of data collection, supporting access to the Least Restrictive Environment (LRE), increased communication with families, and ongoing collaboration with other school-based professionals (Brunsting et al., 2014). Research indicates that stress can have a negative influence on the quality and fidelity of implementation of a student's Individualized Education Program (IEP) and evidence-based behavioral and instructional practices (Garwood, 2022). For example, if a special education teacher is under unmanageable stress, the quality of student goals and programmatic decisions within the IEP, and service delivery of individualized instruction to meet those IEP goals could be at risk. In conglomeration, these additional responsibilities—which include designing instruction, supervising support staff, and upholding legal expectations—require special educators to juggle myriad responsibilities while actively supporting a heterogeneous population of students with disabilities. Therefore, a more comprehensive understanding of the lived occupational experience of stress for special educators is critical.

Purpose
Although research on occupational stress and burnout in special education exists, there are limited studies that specifically explore a special educator's experience of stress across time (e.g., Brunsting et al., 2022). Therefore, we applied a longitudinal mixed methods approach to address the following research questions:
1. How do special educators rate their positive and stressful work experiences across time?
2. What were the sources of one's reported experiences, both positive and stressful?

3. To what extent do data from measures of stress and burnout converge with interviews?

Method

Research Model

To address the present research study, we (a) examined the longitudinal dynamics of special educators' work experiences, including both positive and stressful aspects; (b) identified and analyzed the key sources contributing to these reported positive and stressful experiences; and (3) explored quantitative measures of stress and burnout with qualitative insights from semi-structured interviews. We implemented a mixed methods research study to emphasize the strengths of both qualitative and quantitative inquiry, which provides multiple ways of seeing and hearing a complex and socially relevant issue (Greene, 2007). When findings from qualitative and quantitative data are combined, researchers are positioned to have more insight or understanding of a complex problem than with one method alone (Johnson et al., 2007).

Our study was carried out according to longitudinal convergent mixed methods research design in which qualitative and quantitative data were collected concurrently with an emphasis placed on the qualitative information [quan + QUAL]. Both types of data were analyzed independently prior to convergence (Creswell & Plano Clark, 2018) for our descriptive interpretation. The design is informed by commonly implemented frameworks on educator stress and commonly associated factors of burnout (Jennings & Greenberg, 2009), which aligns with the factors of the Maslach Burnout Inventory (MBI; Maslach et al., 1997), and which was our primary source of quantitative data in this study and was used to examine the longitudinal dynamics of participant experiences. In addition, our qualitative data collection sought to identify and to analyze key sources contributing to occupational stress and satisfaction, which attended to this framework by creating questions that captured the constructs within the MBI. Doing so allowed for coherent data convergence, which was our third research question. The study positioned the participants as experts of their own lived experiences, aligned with the tenets of qualitative analysis (Hesse-Biber et al., 2015). Additionally, we applied aspects of a case study framework, with both forms of data collection informing the interpretation of each case (Stake, 2005).

Following approval from the Institutional Review Board (IRB) each participant completed informed consent procedures at each Timepoint (T1 = Fall 2020, T2 = Spring 2021, T3 = Fall 2021, T4 = Spring 2022). Participants were told that all identifying information (e.g., names of people, schools, or districts) would be removed from all transcripts and quality checked by a second researcher. Surveys were retained with a deidentified code to avoid using participant names. Participants were told they could stop participation at any time and could skip any questions they did not want to answer when engaging in interviews or completing a survey.

Within the convergent design, threats to validity, as described by Creswell and Plano Clark, (2018), were minimized as much as possible. First, our qualitative data (i.e., semi-structured interviews) contained parallel concepts collected within our quantitative data (i.e., surveys) and were collected across the same sample. In addition, threats were minimized within our analysis

and reported findings as data integration was the focus of one of our research questions, with a goal to resolve any disconfirming results when reporting findings.

The positionality of the research team included experts in special education, behavioral health, and neuroscience. Three members of the research team had experience working as a licensed special education teacher in public education settings. Participants were recruited via a mix of convenience sampling and snowball sampling to ensure representation across special education contexts (grades, classrooms, student disability types) and comprised 15 licensed special education teachers and three educators working in a supervised role to complete the final year of a licensure program. The three pre-service educators were included in the study to be *cognizant and inclusive* of the realities of practice (Johnson et al., 2007) due to the increasing number of educators serving students with disabilities on temporary or emergency licenses (Wilkerson et al., 2022). All participants ($n = 18$) were licensed special educators for the final half of the study.

Participants and Sampling

The population for this research included special educators working in public education settings (i.e., elementary, secondary, transition). Our sample consisted of special educators across four school districts in the Northwest region of the United States. Most participants identified as women (72%; male = 28%) and White (83%; Latinx = 11%, Multiracial 6%). Most had 4 or more years' experience (56%) and worked in elementary school settings (61%). Approximately 28% of participants had more than 20 students on their caseloads, 39% had between 11 and 19 students, and the remaining had 10 or fewer. Special education contexts included self-contained programs (39%), resource room (28%), transition program (17%) and Other (17%; e.g., teacher on special assignment).

Data Collection Tools

All participants engaged in three individual interviews and a companion survey at three points in Time (T). Year 1 (Y1) included (T1) Fall 2020 and (T2) Spring 2021; and Year 2 (Y2) included (T3) Fall 2021, followed by a final survey (T4) completed in the Spring of 2022. Participants completed the survey within the same week as their interview so that the qualitative and quantitative data would reflect a consistent experience.

Surveys. Quantitative data were collected using the Perceived Stress Scale (PSS), Maslach Burnout Inventory-Educators Survey (MBI-ES), and demographic questions, which took approximately 20 minutes to complete. There were no missing data outside of two participants who did not complete the MBI-ES at T4 because they were no longer working in education.

Perceived Stress Scale (PSS-10). The PSS is a 10-item instrument to measure the global experience of stress (Cohen et al., 1994). The response scale is based on how often the rater experiences feelings associated with stress in the last month (0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often). The PSS relies on a total score reflecting the presence

of low, moderate, or high stress. The PSS has good internal consistency with multiple studies measuring Cronbach's alpha greater than .70 and research identified associations of the PSS with variables such as anxiety and depression (i.e., Lyrakos et al., 2011).

The Maslach Burnout Inventory (MBI). The MBI measures burnout and has been used in research across multiple fields (e.g., human services, medical). The MBI has a general survey (MBI-GS) and specialized occupation including Human Services Survey (MBI-HSS), Medical Personnel (MBI-HSS-MP), and an Educator Survey (MBI-ES). The MBI-ES is designed to be completed by teachers, administrators, classified staff, and volunteers working in educational settings (Maslach et al., 2018) which is a very heterogenous group of respondents due to certification, training, roles and responsibilities, and developmental level of the students they serve. There is a dearth of research examining only special educator populations using the well-established MBI-ES; therefore, exploring this established measure with a more targeted population of educators enabled greater insight into score reliability and score validity of this assessment. The MBI-ES has three factors: emotional exhaustion, depersonalization/cynicism, and lack of professional accomplishment. Responses are provided on a frequency scale (0 = never, 1 = a few times a year or less, 2 = once a month or less, 3 = a few times a month, 4 = once a week, 5 = a few times a week, 6 = everyday). Prior research has reported adequate Cronbach's alpha estimates across factors ranging from .87 to .90 for emotional exhaustion, .63 to .76 for depersonalization, and 0.72 to .84 for accomplishment. The items in these factors have an adequate amount of shared variance in comparison to overall average variance. These values suggest that the items in the factors are related to one another and provide evidence that the items generate scores that reliably measure the same construct. Associations with MBI-ES factors include student challenging behavior (Lambert et al., 2009) and quality of administrative leadership (Fernet et al., 2012). Although not a diagnostic tool, the MBI-ES is used for self-assessment or aggregated to detect group challenges.

Semi-structured interviews. Qualitative data were collected via semi-structured interviews conducted with all participants across three points in time, totaling 54 interviews. Repeated time points were selected to investigate longitudinal dynamics of special educators' work experiences, including both positive and stressful aspects. Two time points (T1, T3) were approximately three months into a school year, and one timepoint occurred in the Spring (T2) to account for any chronosystemic influences that might emerge in educational settings (i.e., change of experience of stress within the same school year). Interviews typically lasted between 30 and 60 minutes each. Interview facilitators (i.e., the first, second, and third authors) were trained to use a protocol. Most interview questions were informed by the three factors of the MBI-ES (i.e., aspects of the work that feel emotionally exhausting, aspects that make one feel depersonalized or cynical attitude, or aspects of the work that promote feelings of professional accomplishment), with follow-up questions about the source of these feelings/emotions (i.e., students, workload, administration, parents, colleagues). With attention to the DFM, questions also addressed parallel indicators representing the inverse of these experiences (i.e., [a] aspects that promote feeling energized, [b] aspects that promoted a positive attitude or feelings of connection, or [c] aspects that reduced

feelings of accomplishment), again paired with a follow-up to inquire about the primary source if not clearly provided within the participant's responses.

Analytic Approach

Analysis was designed to understand multiple perspectives of the lived experience within the same paradigm followed by identification of themes (Hesse-Biber et al., 2015; Leech & Onwuegbuzie, 2008). Data from both approaches were intended to capture overlapping phenomena related to factors featured in established surveys and interviews about their emotional experiences related to working as a special education teacher. Primarily, we applied a case study approach (i.e., within-case analysis). The objectives for the within-case analysis were to (a) examine the longitudinal dynamics of special educators' work experiences, including both positive and stressful aspects and (b) identify and analyze the key sources contributing to special educators' reported positive and stressful experiences.

Qualitative Analysis. Interviews were audio recorded, de-identified, given a unique identifier and transcribed verbatim by trained undergraduate students, and quality checked by a second trained undergraduate transcriber. Coding was conducted by the first, second, third, fifth, and sixth authors. A codebook displaying coding categories and themes was iteratively developed, and codes were informed by a deductive analysis, drawing from existing theory, factors from the MBI-ES, and variables identified in research for a start list of codes, which is appropriate for an iterative, bidirectional analytic frame (Love & Corr, 2022). Once a code had been identified and agreed upon, the team finalized the definition, inclusion and exclusion criteria, and examples and non-examples. After a start list of codes had been developed, we refined the code book through practice coding to discuss any codes that could be collapsed or expanded. This process maximized the credibility and generalization of findings. The final list of codes represented two categories: (a) reported emotion and (b) the source of that emotion (Table 1). In addition, a code of "Other" was available for both categories to allow the emergence of any novel experiences not provided within the start list of codes.

Table 1

Code Definitions

Code	Definition	Inverse definition
Emotional Exhaustion	Feelings of being overextended and depleted of one's emotional resources	Sentiments of engagement and energy to complete one's responsibilities.
Cynicism/ De-personalization	Cynicism, callousness, or emotional detachment towards others. Presents as a negative, hostile, or an excessively detached response, often including a loss of idealism.	Feeling connected to the work or other people (connecting with co-workers, students, parents). Sentiments of hope, idealism.

Table 1 Continued:

Code	Definition	Inverse definition
Lack of Accomplishment	Challenges dealing with problems, one's perception that they or their work has a negative influence on education, feeling a lack of motivation or inspiration in their belief to make a difference.	Reference to a positive feeling regarding the impact, influence, or value of their work. One's feelings of adequacy about their ability to do their job well.
Source codes	1. Social support (positive or negative) from administration, support staff, other teachers. Coded when it was reported the influence of another individual on their work and one's perception that they are supported and included (i.e., informational, material, emotional). 2. Experiences with students (positive or negative). Coded when discussion of students based on if the situation was positive or challenging for the special educator. 3. Experiences with parents (positive or negative). Coded when discussion of working with a parent/guardian was positive or challenging for the special educator. 4. Workload and Resources (overextended or sufficient): Source related to job demands, caseload size, paperwork, responsibilities, and resources (i.e., personnel, equipment, time, funding). 5. Role conflict, ambiguity, or confusion: Confusion about one's responsibilities, being asked to engage in tasks not related to one's job description, getting mixed messages about responsibilities. 6. Other: When a source code did not align with a reported emotional experience.	

Data were entered into Dedoose, a cloud-based research and evaluation data application (REDA) within a relational database to organize and to analyze the qualitative and quantitative data. Two coders blindly coded each semi-structured interview using the Dedoose filter capabilities prior to consensus (Lieber et al., 2021). Next, each dyad engaged in a consensus process (i.e., review the transcript and codes, identify discrepancies, discuss until consensus had been reached).

Transformation. In addition to a within-case approach, we aggregated code frequencies to explore themes (i.e., cross-case analysis) interviews, time, and participants to understand the frequency upon which emotions or sources were mentioned.

Quantitative Analysis. All participants completed both surveys at each time point using the Qualtrics online survey platform. We calculated descriptive statistics for factor scores and totals. Additionally, we examined the change in MBI factor scores and the PSS total score across time using a two-level hierarchical growth model where time was nested within participants (Raudenbush & Byrk, 2002). Hierarchical growth models, including linear and quadratic growth models, identify intercepts and slopes to assess initial values (intercepts) and change in a particular outcome across timepoints (slope). We utilized linear and quadratic growth models for PSS and the MBI-ES factors to understand better whether participants' scores changed across time, controlling for the nesting of time within participants. We estimated a series of null and

unconditional linear and quadratic growth models using the lme4 package in R and report Level 1 variance explained. We utilized Maximum Likelihood (ML) estimation for model building and Restricted Maximum Likelihood (REML) for final unconditional growth models to account for missing outcome data at level 1. We calculated bivariate correlations between MBI-ES factor scores and the PSS. Strength of associations were determined using the guidelines provided by Cohen et al. (1994), 0.10 weak, 0.30 modest, 0.50 moderate, and 0.8 strong. Next, we converted scores to interpretative profiles provided by the authors and explored across participants and time.

Transformation. The MBI-ES provides qualitative profiles based on quantitative scores across the three factors (i.e., emotional exhaustion, depersonalization/cynicism, professional accomplishment/self-efficacy). The five profiles comprise the following: Engaged (i.e., low exhaustion and cynicism, high efficacy), Ineffective (i.e., low to moderate exhaustion and cynicism, low efficacy), Overextended (i.e., high exhaustion, low to moderate cynicism and efficacy), Disengaged (i.e., low to moderate exhaustion and efficacy, high cynicism), and Burnout (i.e., high exhaustion and cynicism, low efficacy). Interpretations for the Perceived Stress Scale (PSS) were as follows: Low Stress (scores 0-13), Moderate Stress (scores 14-26), and High Stress (scores 27-40). All survey scores at each point in time were transformed into the associated profiles provided by the MBI-ES.

Triangulation Procedures. The qualitative and quantitative data had mid-range (cf. Corr et al., 2021) similarities related to content and assumptions. Data triangulation procedures were identified following a review of the qualitative and quantitative findings to assure purposeful integration (Bazeley & Kemp, 2012; Creswell & Plano Clark, 2018). Integration was iterative and occurred within a qualitatively driven, bidirectional analytic frame like the procedures outlined by Love and Corr (2022). Integration took place within the Dedoose platform and included qualitizing quantitative data (i.e., transforming survey scores into interpretative categories and adding this data as descriptors and linking the profiles to each interview) and quantifying qualitative data (i.e., turning excerpts into code counts). Reviewing codes across the interviews was implemented to identify any changes across time, document relationships, and identify any thematic groups of participants (Creamer, 2018). This analysis process was iterative and visualizations within Dedoose was reviewed to identify any themes across participant profiles or across time. Qualitative profiles from the MBI-ES and PSS were organized in a table by participants across time, then organized into groups related to any changes. To explore the extent in which the MBI-ES and PSS converged with interviews, these profiles were compared with code frequencies to seek any alignment. In addition, variables, such as special education placement, number of educational assistants, caseload size, and years of experience, were explored.

Results

Stress and Positive Experiences Across Time

We first explored the aggregated frequency of endorsements for reported emotional experiences across time. Emotional exhaustion was the most reported negative emotion ($n = 214$), followed by cynicism ($n = 184$). The most common positive emotions endorsed were for feelings that represent the inverse of cynicism (i.e., feeling connected, hopeful; $n = 165$) followed by feelings of professional accomplishment ($n = 128$). Codes that were highly endorsed with representative excerpts are provided in Figure 1.

Figure 1
Code Frequencies with Illustrative Excerpts for Emotional Experiences

Codes	Illustrative quotations for Emotional Experiences
Emotional Exhaustion ($n = 214$)	● *I know I'm just tapped out from it and the exhaustion of the meetings and the caseload.* ● *I cry in the parking lot beforehand, because I don't want to cry in front of my students.* ● *I don't sleep much, I have to take sleeping aids now to fall asleep because the anxiety takes over at night.* ● *I just feel that I can't do it. To be honest, like I was sobbing yesterday and the day before.*
Cynicism ($n = 184$)	● *People just do what they're going to do, it's kind of numbing.* ● *I do not feel that a large part of my general education teachers are welcoming enough to the students that I serve. And I can tell that that's starting to turn me really bitter.* ● *What I felt professionally makes me feel really indifferent, makes me feel really foolish.*
Inverse of Cynicism ($n = 165$)	● *We've all done really well as a school to stay very connected and supportive with each other.* ● *Every time I work with kids. I'm like, yeah, I do just love connecting with kids, like this is my jam.* ● *I love teaching and I love the kids and I love working with the families and building relationships.* ● *The power of school as a community I think it's what's kept us going.*
Professional Accomplish ($n = 54$)	● *I tend to definitely be an external validation kind of person so like hearing her give me positive feedback or anyone else on site. Those kinds of things definitely put some wind in my sails.* ● *So that makes me feel good when I get those checklists done and getting things done and having interventions set up appropriate for these guys…* ● *When I have like moments where I can, like help a student actually be successful on something it's very gratifying. I think the overall success of this year in spite of everything feels good.*

Next, we explored the presence and distribution of endorsements across participants and time. Feelings of emotional exhaustion were endorsed at least once across all but one interview, the inverse of emotional exhaustion was endorsed across exactly one half of the interviews ($n = 24$). All participants endorsed feelings of cynicism at least once, with endorsements across 83% of interviews, and similar findings were identified for endorsements of the inverse of cynicism (i.e., 89% of interviews). All participants endorsed feelings of professional accomplishment at least once, with only four interviews without an endorsement. An overview of endorsements of emotions across participants and time is presented in Table 2.

Table 2
Endorsements of emotions across participants (P) and time (T1, T2, T3)

	EE (-)	EE (+)	Cynicism (-)	Cynicism (+)	Accomplish (-)	Accomplish (+)
P1_T1	4	0	2	3	1	0
P1_T2	1	1	7	2	3	1
P1_T3	4	1	5	5	2	2
P2_T1	6	0	1	3	1	1
P2_T2	5	0	2	3	2	3
P2_T3	7	1	9	1	0	1
P3_T1	2	0	1	4	1	0
P3_T2	5	0	2	5	0	3
P3_T3	3	1	2	4	0	2
P4_T1	6	0	12	2	2	0
P4_T2	7	0	13	3	0	2
P4_T3	4	0	11	0	0	1
P5_T1	5	1	3	0	2	1
P5_T2	1	1	4	2	2	4
P5_T3	4	1	5	5	0	2
P6_T1	5	0	0	2	2	1
P6_T2	1	4	0	4	2	7
P6_T3	7	0	4	2	1	1
P7_T1	3	0	5	0	1	1
P7_T2	2	1	3	0	1	3
P7_T3	9	2	5	3	5	4
P8_T1	1	2	0	6	0	2
P8_T2	2	2	0	2	0	3
P8_T3	2	0	2	4	1	4
P9_T1	7	0	2	5	4	3
P9_T2	5	0	4	4	4	1
P9_T3	2	2	0	1	1	0
P10_T1	5	1	0	5	1	2
P10_T2	4	4	7	5	0	2
P10_T3	16	2	6	2	1	2
P11_T1	3	0	7	1	1	3
P11_T2	6	2	2	1	0	5

	EE (-)	EE (+)	Cynicism (-)	Cynicism (+)	Accomplish (-)	Accomplish (+)
P11_T3	3	1	1	7	0	2
P12_T1	9	0	9	0	1	3
P12_T2	3	0	6	4	1	3
P12_T3	0	2	0	3	0	1
P13_T1	4	0	2	0	1	3
P13_T2	5	0	9	2	2	2
P13_T3	2	2	1	2	0	4
P14_T1	3	0	3	3	1	1
P14_T2	1	2	2	2	1	3
P14_T3	1	3	3	4	0	1
P15_T1	6	2	4	2	1	6
P15_T2	4	3	3	8	0	2
P15_T3	2	0	4	2	1	1
P16_T1	3	1	1	3	0	1
P16_T2	2	0	3	5	1	3
P16_T3	2	1	1	2	2	2
P17_T1	1	0	2	2	0	1
P17_T2	3	1	1	8	0	3
P17_T3	8	1	2	5	3	6
P18_T1	5	0	0	1	2	2
P18_T2	2	1	0	3	0	5
P18_T3	1	1	1	8	0	5
Totals	214	50	184	165	58	127

To explore whether or how experiences of stress changed across time, we calculated scores for the PSS and MBI-ES and fit a series of hierarchical growth models. On average, ratings of the PSS scored in the moderate stress range. The MBI-ES does not utilize a total score; therefore, each factor was reported in Table 3. During the hierarchical growth modeling process, we did not retain random effects for the linear slope term and did not retain the quadratic slope term. Inspection of pseudo r^2 values evaluating the amount of variance accounted for by adding the linear slope term indicate little variance explained within two MBI factor scores (emotional exhaustion $r^2 = .009$; depersonalization/cynicism $r^2 = .03$) and the PSS total score ($r^2 = -0.02$). Some variance ($r^2 = .16$) for feelings of accomplishment scores were explained by the addition of the linear slope term, where the estimated fixed effect of the linear slope was -1.06, indicating a linear decrease in scores across time.

Table 3
Scores and Standard Deviations of PSS and the MBI-ES Factors Across Time

Measure or factor	T1, *M* (*SD*)	T2, *M* (*SD*)	T3, *M* (*SD*)	T4, *M* (*SD*)
Perceived Stress Scale	20.7 (6.3)	19.7 (6.6)	21.8 (6.1)	19.5 (5.5)
Emotional Exhaustion	30.0 (10.5)	28.6 (10.7)	33.6 (12.4)	31.1 (11.0)[1]
Depersonalization	4.7 (4.0)	4.9 (4.6)	5.7 (4.4)	5.6 (2.6)[1]
Accomplishment	39.8 (6.5)	39.8 (6.4)	38.2 (5.6)	36.6 (5.5)[1]

Note. T1 = Fall 2020, T2 = Spring 2021, T3 = Fall 2021, T4 = Spring 2022. N = 18 unless otherwise noted where N[1] = 16.

Co-occurrence of Source with Positive or Negative Experience

Sources

 The most reported source of positive experiences was attached to working with students (*n* = 158) and the most common source of negative experiences included feeling overextended due to workload demands (*n* = 134). Lack of social support from administration also was highly endorsed (*n* = 94). Students were endorsed as a source of positive emotions at least once for all interviews, whereas negative experiences with students were only endorsed 11 out of the 54 interviews. In addition, more than one half of the participants (*n* = 10) never mentioned a negative student experience across all interviews. In addition, all participants endorsed having an overextended workload at least once (approximately 85% of interviews). Figure 2 provides illustrations related to highly reported sources.

Figure 2
Code Frequencies with Illustrative Excerpts for Reported Sources

Code frequency	Illustrative quotations for sources
Positive Experiences with Students (*n* = 158)	● *When you make a connection with a kid. Or a kid goes, I love you. I'm not going to let anybody hurt you. It's just like. So, every day like I leave the school, I take a deep breath. And I'm just like tomorrow is a new day. And it is.* ● *The most satisfaction is the students. Seeing the progress that they make.* ● *I have kids that I feel like, "man, they're, they're the reason I get up in the morning", because they're working so hard.*
Overextended workload (*n* = 134)	● *There are two options. There's, you accept that you're not gonna get everything done and you're not gonna do, get students exactly what they deserve, or you burn yourself out trying.* ● *The to-do list. It never goes away.*
Negative Support Administration (*n* = 94)	● *There's like a lot of empty promises being given right now that we're being told we are being supported and then like the follow through is just not there.* ● *But as far as administrative support is concerned, we are 100% neglected. I mean, I didn't hear from an administrator for many months.* ● *I don't feel like I'm being heard when I share my struggles…A lot of teachers are feeling stressed out.*

Co-occurrence

The most common co-occurrence of a source for stress-related emotions included feeling emotional exhaustion due to an overextended workload ($n = 96$). Next, cynicism commonly co-occurred with reported negative social support from administration ($n = 74$). The last highly co-occurring code included emotional exhaustion with the source coded as "other." Further content analysis identified this code was predominately applied for COVID-19-related factors (e.g., technology challenges, managing sanitation protocols). The inverse of cynicism (i.e., feeling connected to an aspect of the job, hopeful) commonly co-occurred with positive experiences with students ($n = 76$), which also commonly co-occurred with feelings of professional accomplishment ($n = 68$).

Convergence of Data Sources

We converged code frequency counts with Profiles from the MBI-ES and PSS across time and participants. There was high frequency of endorsements of emotional exhaustion ($n = 214$) which also aligned with the high rate (58%) of Overextended profiles (i.e., high exhaustion, low to moderate depersonalization and accomplishment). Alternatively, when converging MBI-ES depersonalization factor with endorsements of cynicism, the data disconfirmed alignment of findings because the factor scores were low compared to normed populations; yet, endorsements of cynicism were high across interviews ($n = 184$). When converging data for feelings of professional accomplishment, data alignment was inconclusive. An overview of the Profiles for the MBI-ES and PSS by participant across time is provided in Table 4.

Table 4
Profiles of the PSS and MBI-ES across participants and time

ID	Fall 2020	Spring 2021	Fall 2021	Spring 2022
No change				
5	Mod, Overextended	Mod, Overextended	Mod, Overextended	Mod, Overextended
11	Mod, Overextended	Mod, Overextended	Mod, Overextended	Mod, Overextended
13	Mod, Overextended	Mod, Overextended	Mod, Overextended	Mod, Overextended
15	Low, Engaged	Low, Engaged	Low, Engaged	Low, Engaged
Interpretations change by year				
10	Low, Engaged	Low, Engaged	Mod, Overextended	Mod, Overextended
14	Mod, Engaged	Mod, Engaged	Low, Engaged	Low, Engaged
16	Mod, Engaged	Mod, Engaged	Mod, Overextended	Mod, Overextended
One interpretation change at one timepoint				

ID	Fall 2020	Spring 2021	Fall 2021	Spring 2022
2	Mod, Overextended	Mod, Overextended	High, Overextended	Mod, Overextended
3	Mod, Overextended	Mod, Engaged	Mod, Overextended	Mod, Overextended
7	Mod, Overextended	Mod, Ineffective	Mod, Overextended	Mod, Overextended
8	Mod, Engaged	Mod, Engaged	Mod, Engaged	Low, Engaged
17	Mod, Overextended	Mod, Engaged	Mod, Overextended	Mod, Overextended

Variable interpretations				
1	Low, Engaged	Low, Overextended	Mod, Overextended	Mod, Engaged
6	Mod, Overextended	Low, Engaged	Mod, Engaged	Mod, Overextended
9	High, Overextended	High, Overextended	Mod, Overextended	Mod, Ineffective
12	Mod, Overextended	Mod, Overextended	Mod, Engaged	Mod, Ineffective
High stress until leaving education				
4	High, Overextended	High, Overextended	High, Overextended	Mod, LE*
18	High, Overextended	High, Engaged	High, Engaged	Mod, LE*

Note. ID = Participant identification number. Interpretations for the Perceived Stress Scale (PSS): Low Stress Score of 0-13, Moderate (Mod) Stress Score of 14-26, High Stress Score of 27-40; Maslach Burnout Inventory- Educator Scale (MBI-ES): Engaged (i.e., low exhaustion and cynicism, high efficacy), Ineffective (i.e., Low to moderate exhaustion and cynicism, low efficacy), Overextended (i.e., High exhaustion, low to moderate cynicism and efficacy), *LE = Left the field of education

Survey Interpretations Across Time. After reviewing survey interpretations across time for the MBI-ES (e.g., engaged, ineffective, overextended, burnout) and PSS (i.e., low, moderate, high stress), we identified five themes related to changes of interpretations across time, informed by work with different populations (e.g., Hutell et al., 2013T). The themes related to changes of interpretations of the MBI-ES and PSS were as follows: (a) interpretations remained the same across time ($n = 4$), (b) interpretations remained the same based on the school year ($n = 3$), (c) interpretations were consistent except for one change for one measure ($n = 5$), (d) interpretations were variable ($n = 4$), and (e) PSS interpretations of high stress until leaving education ($n = 2$).

No Changes. Four special educators (P5, P11, P13, P15) had the same interpretations for the PSS and MBI-ES at all four timepoints. After exploring demographics, it was identified one theme

represented all four special education teachers' experiences (range 6-18 years of experience, *M* = 14). Although there were variations of code frequencies, two teachers did have elevated endorsements of cynicism at one point in time (P13 at T2 and P11at T1), which did not influence a change in survey interpretations.

Change by Year. Interpretations of the PSS and MBI-ES remained consistent by year for three participants (P10, P14, P16) and survey and interview data aligned for two. For P10, the change of a low stress and Engaged profile at Y1 to moderate stress with an Overextended profile Y2 aligned with their increase of endorsements of emotional exhaustion at T3 compared to Y1. One teacher (P16) reported moderate stress at all four timepoints; yet, the MBI-ES interpretation switched from Engaged to Overextended at T3, which was not reflected in any changes of emotional endorsements via their interviews. However, this change might be associated with moving from supervised teaching to a formal licensed position. Analysis of data for one teacher (P14) did not demonstrate any notable alignment to explain the change in interpretation.

One Change in One Interpretation. Five participants (P2, P3, P7, P8, P17) had consistent interpretations for the PSS and MBI-ES with one change, at one timepoint. Investigation of code frequencies demonstrated quantitative and qualitative data converged for some participants. One participant (P2) scored high stress at T3 compared to moderate stress for other timepoints which aligned with their elevated endorsements of cynicism in the T3 interview (n = 9), compared to only one and two endorsements at T1 and T2, whereas the MBI-ES profile interpretation did not change. Further review of the transcripts demonstrated that this teacher was unhappy about the potential of being forced to move classrooms. For P8, a change in interpretations occurred at T4, which was not paired with an interview and the changes in profile interpretations for P3, P7, and P17 were not explained through data convergence.

Variable Interpretations. Four special educators (i.e., P1, P6, P9, P12) had profile interpretations categorized as variable. For P1, there was no clear alignment of the data. For P6, some changes were aligned with code frequencies (i.e., low endorsements of emotional exhaustion, and high endorsements of the inverse), which were reflected in the change to an Engaged profile at T2, but it did not align with an Engaged profile at T3. For P9, reduced endorsements of negative emotions at T3 explained the change from high stress in Y1 to moderate stress Y2 and might be associated with personal leave taken after T2 prior to transitioning to a new position. Data converged as expected for one participant (P12), with survey interpretations of moderate across time, with changes in the MBI from Overextended in Y1 to Engaged at T3 then Ineffective T4. Frequency of endorsements demonstrated higher emotional exhaustion and cynicism at T1 and T2 than at T3, which aligned with a change of positions from a resource setting to a specialized program.

High PSS, Left Education. Two participants (P4 and P18), both early career educators, left their positions between T3 and T4. Interpretations showed both went from High stress at timepoints T1-T3, to Moderate Stress at T4 following the exit of their position. Both did not score in the Burnout profile range for the MBI at any timepoint. No clear alignment of data was identified for P18 who left their position in education due to concerns about COVID-19 safety protocols. The other (P4)

had elevated codes of cynicism across all interviews. These findings are captured within the T3 interview that occurred approximately one month before they left education: *I feel like it was one of the worst decisions of my life. Like, it's terrible. I don't know why people do this…I see the worth in it and I still believe strongly in being a Special Education teacher, but there is no way that I am going to keep doing this. It is unsustainable at its core.*

Discussion and Conclusion

The well-being of special educators, who are responsible to provide free and appropriate public education (FAPE) to students with disabilities, is an issue of educational equity. When these educators experience stress, students with disabilities are negatively impacted. The study was carried out using a longitudinal convergent mixed methods research design (a) to examine the dynamics of special educators' work experiences across time, both positive and stressful aspects; (b) to identify and to analyze the key sources contributing to special educators' reported positive and stressful experiences; and (c) to compare and to contrast the quantitative measure of stress and burnout with qualitative insights. Qualitative findings indicated that an overextended workload and lack of social support from administrators as commonly reported sources of stress while working with students with disabilities were commonly reported as positive experiences. The quantitative results indicated no significant change across time for the MBI-ES or PSS, with lower-than-expected scores on the factor of cynicism/depersonalization compared to general education populations. Convergence of qualitative interviews and quantitative surveys to assess stress and factors of burnout suggest that commonly used measures in this paradigm might not capture the unique experiences of special education teachers.

The Influence of Social Support
Previous research with general education teachers identified that student challenging behavior represented a significant stressor that can be mitigated by social support (Paris et al., 2021). In this study, challenging student behavior was not identified as a common source of stress; however, negative experiences working with other adults, often coded as cynicism, was commonly endorsed. In fact, most experiences working with students were attached to endorsements of positive feelings, specifically the inverse of cynicism (i.e., connection to one's work) or feelings of professional accomplishment. These findings suggest that challenging experiences with students might not have the same influence or impact on special education teachers' experience of stress as it does for general education professionals. One possible hypothesis is that special education teachers might be more positive about engaging with students who have higher educational support needs. Such a hypothesis is tenable because many special education teachers choose this work to support students with needs beyond typical services available within public education. In contrast, general education teachers might view student challenges as unexpected or burdensome and, therefore, more stressful.

When converging qualitative and quantitative findings, there was no natural alignment between the elevated number of coded endorsements for cynicism compared to the low scores for the MBI-ES factor of depersonalization. In our sample, scores ranged from 4.7 to 5.7 which was

significantly lower than norms from typical teaching populations (i.e., 11.0). One explanation for the discrepant findings could be attributed to the fact that the quantitative data (i.e., items for MBI-ES factor of depersonalization) consisted of questions that solely target experiences with *students* (e.g., I don't really care what happens to some students). Yet, our qualitative findings demonstrate that students were often a source of positive experiences, which might explain why quantitative data from the MBI-ES scores for depersonalization were generally low for our sample. These findings suggest that the items for the factor depersonalization within the MBI-ES might not capture the full emotional experience for special education teachers—in particular, the influence of working with other adults (i.e., administrators, classified staff, general education teachers), which includes the support provided, or not provided, by these other education professionals.

Measurement

Results from our study indicate important findings related to quantitative measurement for stress and burnout. First, quantitative findings for the factor of emotional exhaustion within the MBI-ES were higher than the norm-referenced scores (i.e., 28.6-33.6 from our sample compared to 21.3 from the normed sample; Maslach et al., 2018). More research is needed to identify whether these findings are associated with the specific roles and responsibilities within special education or whether or how much scores are influenced by the changing COVID-19 context. As previously stated, depersonalization scores, on average, were less than one half of the average scores for the norm-referenced teaching population. This aligns with recent research using a sample of 230 first-year special educators of students with emotional and behavioral challenges with an aggregated depersonalization score of 5.4 (Brunsting et al., 2022). For feelings of accomplishment, lower scores indicate lower feelings of efficacy, and our sample reported higher-than-average feelings of accomplishment (i.e., range of 36.6 -39.8 compared to 33.54), translating to participants reporting they felt competent and successful in one's work a few times a week or more, compared to once a week from norm-referenced populations. Again, our findings align with differences identified in previous research with a special educator only population reporting higher feelings of professional accomplishment (i.e., Brunsting et al., 2022). Although our sample was small, recent research supports our findings that norms from general educator populations do not align with our findings. Commonly implemented measurement tools, including the MBI-ES, also might not have the sensitivity to identify changes of the special education teacher experience, evidenced by our two participants who left education following T3—yet, never received a score across factors associated with the "Burnout" interpretation from the MBI-ES.

As a longitudinal study, we were interested to determine whether perceptions of stress and the three factors of burnout changed across time, which served as our first research question. We were curious to identify whether any factors related to the unfolding COVID-19 pandemic influenced changes in reported experiences. For example, teachers engaged in various types of service delivery (i.e., in-person or remote), which had the potential to influence changes in experiences at work. Yet, as an aggregated group, there was no meaningful change identified across group interpretations for the PSS or factors of the MBI-ES that aligned with changes due to COVID-19 related to service delivery. This did not align with research expectations because we had hypothesized that there would be more consistent changes across participants and time. Or there

would be a clear variable (i.e., remote vs. in-person) predicting change within each participant (if change across time did occur), which was not confirmed in our study.

Based on findings, the most common predictors of changes to interpretations across time of the PSS and MBI-ES were attributed to non-COVID-19-related factors and included changing positions, changing classrooms, or leaving education. For our quantitative data (i.e., surveys), we examined change by identifying whether the addition of the slope within our linear model led to a change in how much variance (i.e., differences in values) in the factors were explained by the overall growth model. Examining change in variance provides a better estimate of how meaningful an effect might be, rather than just examining significance for an effect. The limited variance explained by PSS and all MBI-ES factors except for personal accomplishment, suggests that adding a slope to the model does not explain much variance in each factor. Together, this provides evidence that MBI-ES factors and PSS did not change significantly across time, and calls into question how sensitive the measure is to burnout trajectories of special educators. Only for personal accomplishment was there an indication that a linear slope helped to explain some differences in values across time, although only an additional 16% of the differences in values across time was explained. This aligns with previous research that burnout is consistent across time for educators who remain in the same classroom (Dunford et al., 2012).

One would expect the ongoing changes and unpredictability due to COVID-19, especially a changing instructional context, would produce more changes in interpretations. Results indicated that special education teachers might require adjustments to items of the MBI-ES. Additionally, our linear growth models indicated very little variance in the PSS and most MBI-ES factors could be accounted for by adding time into the models. Previous research has identified that burnout trajectories might be mostly stable across time, especially after the first 3 years of teaching. Yet, research also has indicated that stability could be a consequence of measurement or analysis (Hultell et al., 2013). Therefore, the stability and variability of one's experience over time and measurement sensitivity for the lived experience of special education teachers is a topic requiring additional research.

Implications for Practice
Working in education generally attracts individuals who are looking for a person-centered profession and it makes sense that interpersonal relationships are associated with one's experience on the job. Longitudinal research with general educator populations suggested that relationships with administrators, colleagues, and parents might be one of the factors that are negatively impacting the profession (Dworkin & Tobe, 2014). Even early research identified the profound influence of administrative support on a special education teacher's decision to leave (Billingsley & Cross, 1991), which demonstrates that perceived social support is an ongoing, pervasive barrier of educational practice. In addition, the proliferation of new and unpredictable challenges due to pandemic-related factors put the impetus for change on educational leaders to ensure that their educators are positioned to continue providing high-quality services to students with disabilities.

In this study, the influence of perceived negative social support from other professionals, particularly administrators, was clearly linked to experiences of cynicism/depersonalization based on our qualitative findings. For example, factors such as lack of communication, programmatic changes, and new additions to job responsibilities, were commonly reported as being stressful and associated with feelings of cynicism/indifference to one's work. For example, the two participants who left their position following T3 both communicated that challenges with administrator(s) were a factor in their decision to leave. Specifically, one was frustrated with a quick removal of previously required COVID-19 protocols and believed that their concerns were ignored. The other educator communicated that both district and school administrators were not acknowledging their concerns related to working with students with severe support needs related to aggression and elopement (i.e., running out of designated areas). The important takeaway is that the emphasis was not on the changes or challenges alone; rather, it was that they were not feeling supported while experiencing these changes or challenges.

Therefore, an emphasis on promoting feelings of social support, particularly from one's administrative supervisor, is an important area of future research (Herman et al., 2018). In a recent systematic review of special education teachers and burnout, findings consistently identified social support as a buffer to stress (Brunsting et al., 2014) and research has linked higher administrative support to lower emotional exhaustion (Bettini et al., 2020). There is evidence that for special education teachers working with students with emotional or behavioral challenges, administrative support might even ameliorate burnout, more so than that of the perceived support of general education teachers or paraprofessionals (Brunsting et al., 2022). Future research should investigate the specific dimensions (i.e., instrumental, informational, affective) and sources of social support (i.e., administration, general education, or classified staff) in greater detail to understand better the factors within the construct of social support that might protect or exacerbate the experience of stress (Park & Shin, 2020), as well as individual roles within the support provided.

Future Directions and Limitations
Special educators have a diverse array of professional responsibilities unique to their work (e.g., creating individualized educational programs/plans (IEPs) for students with disabilities, supervising support staff, upholding legal obligations for students to be included with typical peers, paperwork, and often higher communication needs with parents and families). Therefore, treating special educators and their lived experience as the same as other education professionals is not tenable. Interventions to promote positive social support, including workplace characteristics and collegial relations (Conley & You, 2017) is an important consideration for future research, especially for school and district leaders. For example, school-based administration might have limited decision-making power compared to district-, state-, or federal-level administrators or officers of education. One limitation of our study is that the code for social support (positive or negative) from administration was not delineated by these distinct administrative categories. This limitation impacts practical recommendations as efforts to promote positive administrative social support would look different based on the leadership context. For example, school/building administrators often have the advantage of proximity and increased opportunities to connect with special education teachers compared to district-level administrators. Therefore, interventions

could assume more opportunities to connect (i.e., higher intervention dosage) than district-level administrators.

Further investigation into strategies to increase special education teacher perceptions of social support from administration is warranted because when someone is in crisis, intervention is a steeper slope than prevention. In special education, disrupting a multidimensional construct such as burnout is complex because there are limits to what can be changed related to provision of services, legal paperwork obligations, and management of support staff. However, the frequency and quality of perceived social support school-based administrators can provide might be a more malleable and appropriate variable of change to on which to intervene to address special education teachers' experiences of stress. In addition, policymakers should fully account for the influence of macro-level contexts and consider legislation targeted to improve factors related to workplace satisfaction (i.e., salary, working conditions, protected planning time, opportunities for professional development, caseloads size) as an additional prong of current recruitment and retention efforts.

Although implementing a mixed methods research design provided important information that would not emerge with qualitative or quantitative data collection alone, there are a variety of ways to enhance the design. One consideration would be to capture intensity of emotions alongside the frequency of endorsement and source. For example, McClure et al. (2021) implemented an intensity-based matrix for coding when investigating the experience of online learning challenges for university students during COVID-19.

Finally, the most compelling implication for future research concerns quantitative measurement, although not without limitations. Specifically, the fact that our results indicated extremely low scores of depersonalization compared to normed groups of all education professionals. In addition, the profiles identified based on factor-level scores of the MBI-ES did not always reflect the same experiences as our qualitative data (i.e., codes from interviews). Much of the research on the measurement of educator burnout paired with the development of intervention strategies has been conducted in the last 10 years and continued research is needed to develop more preventative and definitive solutions. As previously discussed, the MBI-ES, in particular the factor of depersonalization, might not be appropriately sensitive to the unique experiences of special educators. Recent research has suggested to include colleagues, support staff, and administration, not only students, within the items of this factor, and our findings confirm these suggestions (Garwood, 2022). Yet, interpretation of quantitative data in this study should be interpreted with caution due to a small sample size.

Another limitation of our study is that we did not have the opportunity to interview participants at T4, which limits a full triangulation of data. In addition, results should be interpreted with caution due to a small sample. Yet, within the challenge of representativeness compared saturation trade-off within mixed methods research (i.e., Teddlie & Yu, 2007), our design (quan + QUAL) accounts for the qualitative emphasis. We did not report or interpret the statistical significance of the linear slope terms of our unconditional growth models due to the limited power leading to a higher

likelihood of failing to find significant linear change in scores. The small sample did not allow us quantitatively to evaluate the stability of MBI-ES or PSS scores by teacher characteristics.

In addition, our sample comprised predominantly White and women special educators; therefore, future researchers should seek to recruit a more diverse sample. There is a considerable need to ensure accurate representation of experiences when generalizing knowledge. Although the field of U.S. education is predominantly White and women, this perspective does not speak to the experiences of all special educators. Research that involves the collection of diverse views is critical to understand lived experiences, which becomes even more important when designing interventions that are designed to account for all who will receive it (Sinclair et al., 2018).

There is no question that understanding factors that lead to stressful or positive experiences on the job as a special educator will continue to be an important area of research. Our findings suggest the experiences of special educator stress might be different than the experiences of general education teachers, and continued investigation using comparison groups might provide additional insights into the nuances of these differences. Although some research indicates that special education teachers might experience burnout at a higher rate, more research is needed to inform the ways that administrators can predict or monitor special education teachers' work-related experiences so that intervention can occur before reaching the point of burnout-related turnover.

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Conflict of Interest
The authors have no conflicts of interest to report or financial information to disclose

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