



# Application of a Model of Workforce Resilience to the Education Workforce: Expanding Opportunities for Support

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## Abstract

The current study analyzed 502 responses from members of the education workforce on the Resilience at Work (RAW) scale and other measures of health and job satisfaction as part of an initiative offering training and technical assistance to support student and staff well-being. A latent profile analysis using scores on components of the RAW identified three resilience profiles: lower, moderate, and higher capacities for resilience. Profiles were differentiated across components related to resilience capacity including alignment of work and personal values, level of social support, and ability to manage stress. Differences between profiles were observed across days of poor physical health, days of poor mental health, days of activity restriction, general health rating, and domains of burnout, compassion satisfaction, and secondary traumatic stress. These findings reinforce calls to support the education workforce through changes that allow access to meaningful work, an evaluation of demands including workload, relevant training on emotional wellness, positive experiences, connections with others, and stress management.

**Keywords** Educators · Resilience · Well-being · Burnout · Secondary traumatic stress

## Abbreviations

RAW	Resilience at work scale
Pro-QOL	Professional quality of life scale
LPA	Latent profile analysis

## Introduction

Even prior to the COVID-19 pandemic and racial reckoning related to the murder of George Floyd and many others in recent years, members of the education workforce in the USA reported higher levels of stress and poorer physical and mental health than other professionals (American Federation of Teachers, 2015, 2017; Jarvis, 2002). Recent

work indicates that many are reaching a breaking point and are considering or actually leaving the profession (Steiner & Woo, 2021). While interventions that help educators manage negative emotions have a role in addressing this problem (Hagermoser Sanetti et al., 2020), additional supports and resources are necessary to support them in balancing the multiple demands of their profession (Farley & Chamberlain, 2021). By looking at the association of a range of factors related to capacity for resilience, physical and mental health, and professional quality of life, this study of the education workforce including K-12 teachers, administrators, and other school staff supports work calling for structural change to support the education workforce in the face of overwhelming demands. We connect our findings to an existing literature that recommends supporting professionals working within schools using a strengths-based systemic approach that integrates insights from veterans in the field.

## Educator Stress and Associated Problems

Educator stress and associated health problems, burnout, and attrition are long-standing concerns (Boström et al., 2020; Gray et al., 2017; Ingersoll, 2001; Johnson et al., 2005; Kacey, 2004; Kyriacou, 2001; Saloviita & Pakarinen,

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2021). Even before the COVID-19 pandemic, working within education, whether as a teacher, school leader, or support staff member, was highly stressful (Camacho et al., 2018; Jarvis, 2002; Kyriacou, 2001; Mahfouz et al., 2019). The pandemic added demands including implementing COVID-19 mitigation strategies, supporting students who had lost instructional time, assuming the work of absent colleagues, and supporting the mental health of students and staff experiencing intense stress (Diliberti et al., 2021). In January 2022, 78% of teachers reported frequent job-related stress, about twice that of the general working population (Steiner et al., 2022). Similarly, surveys of school leaders during the pandemic indicated high levels of stress, anxiety, and overwhelm (Brackett et al., 2020). School staff working to support the mental health of students and families experienced heightened stress due to frequent crises, increased needs, and decreased resources (Villares et al., 2022). While some stress is inevitable, experiencing extended periods of heightened stress without access to adequate resources can be associated with poor physical and mental health (Farley & Chamberlain, 2021; Prilleltensky et al., 2016).

Extended periods of stress and limited support have been associated with burnout, a complex syndrome with symptoms in three areas: (1) extreme exhaustion, (2) feelings of cynicism or detachment, and (3) low sense of accomplishment or effectiveness (Bakker & Demerouti, 2007; Maslach & Leiter, 2016). Burnout has been linked to mental health difficulties such as anxiety and depression as well as physical health problems such as heart disease and type 2 diabetes (Morse et al., 2012; Salvagioni et al., 2017). Like other helping professionals, school staff may be vulnerable to burnout, as they are responsible for ensuring the emotional well-being of others, often putting their needs ahead of their own. Recent surveys and meta-analyses indicate that burnout is a key factor in attrition, or decision to leave their careers, for education staff, and that it may be becoming more prevalent over time (GBAO, 2022; Hanover Research, 2022; Madigan & Kim, 2021).

Like stress and burnout, workforce attrition in education is a long-term problem. Prior to the COVID-19 pandemic, teachers in the USA had an annual attrition rate of approximately 8% with an estimated 40% of teachers quitting within the first four years of work (Carver-Thomas & Darling-Hammond, 2017). Although there is variation by locale, rates of public-school teacher attrition have increased slightly during the pandemic (Barnum, 2022). Results of a poll conducted in June 2022 indicated that 65% of public-school leaders were concerned about filling vacant staff positions (*School Staffing Shortages: Report from the January School Pulse Panel*, 2022). Further, recent surveys indicate that about 33% of remaining educators are thinking of exiting in the next two years and nearly 55% are thinking of exiting sooner than initially planned (GBAO, 2022; Hanover Research, 2022).

Attrition rates for school leaders are high, with about 18% of principals leaving their position each year (Levin et al., 2019). School superintendents have similarly high attrition rates at around 13% annually (Schwartz & Diliberti, 2022). Turnover rates for mental health therapists in all settings are high at 30–60% annually, and therapists working within schools face additional pressures that may increase attrition (Adams et al., 2019).

Models of job satisfaction emphasize that workers must have adequate resources to meet demands (Bakker & Demerouti, 2007), or excessive stress, burnout, and attrition will occur. The demands placed on people working within education, including work overload, time pressure, lack of social support, and difficult-to-achieve goals are well-documented (Hakanen et al., 2006; Maas et al., 2021; Prilleltensky et al., 2016; Skaalvik & Skaalvik, 2011, 2018). While demands placed on the education workforce are high, resources are limited (Camacho et al., 2018; Kyriacou, 2001; Skaalvik & Skaalvik, 2018), putting them in a position where burnout is likely. Autonomy is important for job satisfaction (Kengatharan, 2020; Worth & Van den Brande, 2020), yet it is limited in education by policies promoting high-stakes testing and curriculum restrictions (Farley & Chamberlain, 2021). The COVID-19 pandemic and racial reckoning brought additional stress for the education workforce, and recent polling indicates that many are leaving, or considering leaving, the field (Chan et al., 2021; Steiner & Woo, 2021). To address this issue, we must identify resources to support the education workforce without placing additional burden on school staff (Madigan & Kim, 2021; Steiner et al., 2022).

### Supporting the Education Workforce Through Adversity

Supporting students and families during times of adversity and trauma may increase education staff's vulnerability to burnout and secondary traumatic stress, factors which can lead to attrition (Christian-Brandt et al., 2020; Hydon et al., 2015; Miller & Flint-Stipp, 2019). Trauma or adversity have been common experiences for children in the USA for many years (Finkelhor, 2020; Sacks & Murphey, 2018). More than two-thirds of children report at least one traumatic event or instance of threatened death, serious injury, or sexual violence, by age 16 (Copeland et al., 2007). While most children who experience a traumatic event do not develop symptoms of post-traumatic stress disorder, those who do are at risk for problems related to learning and education, poor physical and mental health, and involvement with the justice system (Grummitt et al., 2021; Larson et al., 2017; Mandavia et al., 2016; Saunders & Adams, 2014). Many of the children who do not experience a traumatic event may be exposed to toxic stress, which differs from trauma in that it is a period of

sustained high-intensity adversity rather than a discrete life-threatening event (Garner et al., 2012; Shonkoff et al., 2012). Although it is difficult to estimate the number of children exposed to toxic stress, recent work in the USA indicates that almost 60% of adults report experiencing at least one adverse childhood experience and about 20% report experiencing three or more (Giano et al., 2020). Characteristics such as minoritized race or ethnicity, lower income or education level, and being a woman are associated with increased risk of experiencing trauma and adversity (Giano et al., 2020).

Some sources indicate the mental health of children and adolescents has declined over recent decades (Collishaw & Sellers, 2020; Twenge et al., 2019), and that stressors during the pandemic, such as loss of social support and routine, have exacerbated this problem (Samji et al., 2022; Zolopa et al., 2022). Currently, youth mental health needs outweigh resources, and shifting to prevention and early intervention is a frequently proposed solution (Kollins, 2022). Educators, who are often the first point of contact for youth experiencing mental health difficulties, can feel unprepared and overwhelmed by student and family mental health needs, an experience that may contribute to emotional exhaustion and burnout (Alisic, 2012; Berger et al., 2021; Temkin et al., 2020). Despite the awareness of this risk, there is limited knowledge of how to support non-clinical staff in helping children and families who have experienced trauma and adversity. Models explaining how helping professionals like therapists maintain personal well-being emphasize the importance of balancing energy-depleting experiences with renewing experiences that build compassion satisfaction, a sense of fulfillment gained from work as a helper (Ludick & Figley, 2017). Due to their role in supporting youth, these processes may be applicable to education staff as well (Kangas-Dick & O'Shaughnessy, 2020; Skaalvik & Skaalvik, 2018), although recent research indicates that processes related to trauma exposure and coping may be unique to educators (Fleckman et al., 2022).

The high prevalence of trauma and toxic stress in children means that education staff will likely support students coping with these adversities on a regular basis (Copeland et al., 2007; Finkelhor, 2020). Secondary traumatic stress, or the experience of post-traumatic stress symptoms such as anxiety, nightmares, and withdrawal, can result from hearing about students' traumas (Baird & Kracen, 2006), and many school staff members receive limited preparation for dealing with this experience (Caringi et al., 2015; Christian-Brandt et al., 2020; Rankin, 2022; Simon et al., 2022). Without appropriate supports, secondary traumatic stress symptoms can contribute to poor outcomes for both students and school staff (Caringi et al., 2015; Rankin, 2022). This study will tie together education staff's ratings of compassion satisfaction, secondary traumatic stress, and burnout with factors related

to resilience to inform efforts to better support school teams in navigating stress.

## Resilience

When adversity is unavoidable, interest often turns to learning how others have persevered or even thrived despite hardships. Many models of resilience, the ability to withstand and "bounce back" from stress, emphasize that it is not a fixed ability within the individual but a function of the interaction between the person and environmental resources (Masten, 2015). The multitude of factors that influence education staffs' abilities to persevere include policy, social-cultural environment, and relationships with leaders, peers, and students (Gu & Day, 2013). Most models emphasize an interactional approach to resilience where intrapersonal (e.g., sense of vocation or purpose, ability to use problem solving and emotion regulation strategies) and contextual factors (e.g., level of social support) work in combination to influence peoples' capacities to manage stressors and thrive in their work (Mansfield et al., 2016). This work emphasizes complexity and the interaction of systems that influence the well-being of school staff while providing multiple points for intervention.

## Current Status of Supports for Education Staff

Many interventions for education staff focus on teaching them to manage their anxiety and distress via cognitive techniques and other stress management strategies (Hagermoser Sanetti et al., 2020; Jennings et al., 2017; Klingbeil & Renshaw, 2018). However, the current state of crisis, with many school staff members feeling overwhelmed and burnt out, brings to the forefront long-standing calls to support them not solely through helping them manage emotions but by capitalizing on strengths and renewing experiences, enhancing social support, and making systemic changes. The current study will support this purpose by examining the initial application of a general model of workforce resilience to a sample of education staff. Latent profile analysis (LPA) was used to explore possible groupings of education staff based on capacity for resilience. Since this is the first time latent profiles have been explored among education staff using this model of workforce resilience, emerging groupings were validated with meaningful concurrent measures of physical and mental health and professional quality of life. Implications of findings for education staff, the workforce, and school systems are presented.

## Method

### Participants

Participants ( $N=502$ ) included K-12 teachers, administrators, and other school staff at 20 public schools across the

**Table 1** Demographic information for survey respondents

	<i>n</i>	Percent
<i>Role</i>		
Teacher	381	75.9
Administrator	30	6.0
Healthcare provider	5	1.0
Student support staff	38	7.6
Write-in	9	1.8
Missing	39	7.8
<i>Years in schools</i>		
< 2 years	40	8.0
2–5 years	72	14.3
6–10 years	82	16.3
> 11 years	271	54.0
Missing	37	7.4
<i>Highest level of education</i>		
< High school diploma	2	0.4
High school diploma	4	0.8
Associate degree	4	0.8
Bachelor's degree	155	30.9
Master's degree	263	52.4
Doctoral degree	11	2.2
Write-in	25	5.0
Missing	38	7.6
<i>Gender</i>		
Woman	297	59.2
Man	147	29.3
Non-binary/third gender	2	0.4
Prefer not to say	19	3.8
Missing	37	7.4
<i>Race</i>		
Black/African American	98	19.5
American Indian	8	1.6
Asian	29	5.8
Hawaiian	2	0.4
White	225	44.8
Multi-racial	22	4.4
Write-in	66	13.1
Missing	17	3.4
<i>Ethnicity</i>		
Hispanic	110	21.9
Not Hispanic	346	68.6
Missing	46	9.2

USA participating in an initiative to provide training and technical assistance to enhance trauma-responsive practices and improve student and staff well-being. Schools volunteered to receive these resources. As shown in Table 1, 75.9% ( $n=388$ ) of respondents identified as teachers, 53.2% ( $n=272$ ) worked in the schools for over 11 years, and 52.1% ( $n=266$ ) had earned a master's degree. Further, 58.9% ( $n=301$ ) of respondents identified as women, 44.8% as White, 21.7% as Hispanic or Latinx, and 19.6% as Black or African American. Respondents were from 20 different schools representing many regions across the USA and were employed at a variety of school levels (seven elementary schools, nine middle/intermediate schools, four high schools). In 17 out of 20 schools, at least 90% of students identified as ethnic or racial minorities.

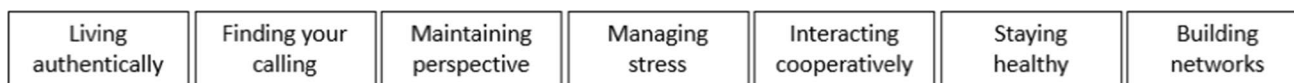
### Procedures

Staff members were asked to complete an online survey that included the Resilience at Work Scale (Winwood et al., 2013), the Healthy Days module of the Health-Related Quality of Life scale (Centers for Disease Control & Prevention, 2020), and the Professional Quality of Life scale (Stamm, 2002) during the autumn of 2018 prior to provision of additional resources. Demographic information including role at the school, years of experience, race, ethnicity, and gender were also collected. Since surveys were designed to be anonymous, no information that could be used to identify a respondent was collected. Completion of the survey was voluntary; participants were informed that their decision to complete or not complete any question would not impact their employment or any other benefits they might receive. Survey distribution and analyses were approved as part of a larger evaluation project by the university IRB. Participants were not compensated for their completion of the survey.

### Measures

#### Resilience at Work Scale

The Resilience at Work (RAW) scale (Winwood et al., 2013) is a 25-item measure of workplace resilience that is broadly applicable to all fields of employment. The RAW scale provides a total score as well as scores for the seven domains of this model: (1) Living Authentically: living by personal values, having good awareness and ability to regulate emotion, using personal strengths; (2) Finding Your Calling: seeking work that has a purpose, aligning work with core values and beliefs; (3) Maintaining Perspective: capacity to reframe setbacks, maintain solution focus, manage negativity; (4) Managing Stress: use of work and life routines to manage stressors and maintain a healthy balance with adequate time for relaxation; (5) Interacting Cooperatively: seeking and



**Fig. 1** Resilience at work model

providing support in the workplace, (6) Staying Healthy: physical fitness and healthy diet, and (7) Building Networks: having others to provide support both within and outside of work. Figure 1 provides a visual of the domains of the RAW. Respondents are asked to rate their level of agreement with statements about themselves and their work (e.g., “I have important core values that I hold fast to in my work-life,” “I have friends at work I can rely on to support me when I need it”) on a 7-point Likert-type scale with 0 being “strongly disagree” and 6 being “strongly agree.” Initial analysis of the RAW scale showed an overall Cronbach’s  $\alpha$  of 0.84 (Winwood et al., 2013), and it demonstrated adequate internal consistency in this sample with scale values ranging from  $\alpha=0.60$  to  $\alpha=0.83$  (see Table 2). Further testing has shown the RAW scale to have high reliability and has found RAW scale scores to be positively associated with work engagement (Malik & Garg, 2018).

### Professional Quality of Life Scale (Pro-QOL)

The Pro-QOL (Stamm, 2002) is a 30-item self-report measure of factors related to potential positive and negative impacts of working as a helper. The Pro-QOL has three subscales: Compassion Satisfaction, Burnout, and Secondary Traumatic Stress. When used with educators, the Compassion Satisfaction subscale measures pleasure derived from

helping students to learn, positive feelings about colleagues and being part of a team, and ability to contribute to the greater good of society. The Burnout subscale measures feelings of depression or hopelessness associated with having a high workload without adequate support. The Secondary Traumatic Stress subscale measures fear and anxiety-related symptoms that may be related to working with a population that has experienced trauma or chronic stress. Each subscale can be calculated as a continuous score or categorized into low, average, or high using cutoff scores. Respondents are asked to rate how frequently they have had different thoughts or experiences (e.g., “My work makes me feel satisfied,” “I feel worn out because of my work as a teacher”) on a 5-point Likert-type scale with 1 being “never” and 5 being “very often.” The Pro-QOL is a well-established measure that showed strong internal consistency in our sample, with Cronbach’s alphas ranging from 0.82 to 0.93 (see Table 2).

### Healthy Days Measure (HDM)

The standard four-item set of Healthy Days questions, developed by the Centers for Disease Control and Prevention for use in national surveys beginning in 1993, asks respondents to provide: (1) a rating of their overall level of health on a five-point scale from excellent to poor, (2)

**Table 2** Descriptive statistics of RAW scale subdomains and cross-sectional outcomes

Scale	Range	<i>M</i>	SD	N of items	Cronbach’s $\alpha$
<i>RAW scales</i>					
Living authentically	0–6	4.92	0.72	4	0.71
Finding your calling	0–6	4.88	0.91	4	0.81
Maintaining perspective	0–6	3.58	1.01	4	0.60
Managing stress	0–6	4.19	1.13	4	0.81
Interacting cooperatively	0–6	4.77	0.87	3	0.60
Staying healthy	0–6	4.22	1.27	3	0.83
Building networks	0–6	4.84	0.93	3	0.66
<i>Healthy days measure</i>					
General health rating	1–5	2.54	0.88	1	–
Days poor physical health	0–30	4.27	6.49	1	–
Days poor mental health	0–30	5.47	6.94	1	–
Days activity restriction	0–30	3.74	5.97	1	–
<i>Pro-QOL</i>					
Compassion satisfaction	10–50	40.85	6.27	10	0.93
Burnout	10–43	22.76	5.75	10	0.82
Secondary traumatic stress	10–50	22.09	6.08	10	0.83



the number of days out of the past 30 when the respondent experienced poor physical health, (3) the number of days out of the past 30 when the respondent experienced poor mental health, and (4) the number of days out of the past 30 when poor physical or mental health kept the respondent from completing their usual activities. In an analysis of 42,000 adults across 13 states, an average of 3.1 days of poor physical health, 2.8 days of poor mental health, and 1.7 days of activity limitation were reported across genders (CDC, 2000).

## Data Analysis Plan

### Preliminary Analyses

Descriptive statistics including mean and standard deviation were calculated for all measures. To examine internal consistency, Cronbach's alpha was calculated for all scales containing more than one item. To examine validity, correlations between measures were calculated. As different groups of educators by role (teacher, administrator, other school staff) were included in the sample, we conducted analysis of variance (ANOVA) to examine between-group differences in scores on included scales.

### Latent Profile Analysis

LPA with full information maximum likelihood (FIML) estimation using *Mplus* version 8.0 (Muthén & Muthén, 1998) was conducted to explore underlying latent class structure based on educators' resilience at work on the seven domains specified by the RAW Scale. A class-invariant diagonal structure, the default in *Mplus*, was considered with covariances between indicators fixed to zero within classes and variances constrained to be equal across groups. First, a one-class model was fit to the sample. The number of classes was subsequently increased until indicators of absolute, relative, and substantive fit supported a given solution.

To assess fit between latent class models, Bayesian Information Criterion (BIC), Adjusted BIC, Bayes Factor (BF), Lo-Mendell-Rubin likelihood ratio test (LMR-LRT) and Bootstrap Likelihood Ratio Test (BLRT) were considered to compare  $K$ -classes to  $K-1$ -classes. The lowest values for the BIC and ABIC may suggest the best fitting model, although "elbow" plots of BIC and ABIC values were also examined, as diminishing benefit was observed in increasing class number (Masyn, 2013). Significant  $p$ -values for the LMR-LRT and BLRT suggest that the model with  $K$ -classes (i.e., alternative model) fit the data significantly better than the model with  $K-1$  classes (i.e., null model). Finally, theoretical rationale for a given latent class structure was considered,

as determining the best model fit based only on fit statistics negates the substantive interpretation of the model and its usefulness within the context of educators' capacity for resilience. Following class enumeration and selection of possible models, entropy, and average latent class probabilities were also considered, with a recommended entropy value of 0.80 or above.

### LPA with Distal Outcomes

Once an unconditional model was chosen, the researchers specified a conditional model with proximal distal outcomes to examine the relation of latent profiles to well-validated measures of well-being. The proximal distal outcomes of interest were educators' ratings of their overall health, physical health, and mental health from the HDM, as well as self-rating of compassion satisfaction, burnout, and secondary traumatic stress from the Pro-QOL. A BCH modified 3-step approach was employed to ensure that latent profiles did not shift in size (Asparouhov & Muthén, 2014; Masyn, 2013). Meaningful differences between latent profiles across these outcomes provided evidence that emerging profiles were meaningful and different across constructs of interest.

## Results

### Preliminary Analyses

Means, standard deviations, and Cronbach's alpha for each scale aligned with previous research (see Table 2). Correlation coefficients between scales were in the expected directions, with negative outcomes such as poorer health being associated with higher levels of burnout and secondary traumatic stress and lower levels of compassion satisfaction (see Table 3). The Pro-QOL and many RAW scales showed associations in the expected directions, with scores associated with higher resilience also being associated with higher compassion satisfaction and lower secondary traumatic stress and burnout. ANOVA of scores by role showed no significant differences by group across the HDM, Pro-QOL, or RAW subscales.

### Latent Profile Analysis

Average responses on the RAW domains and cross-sectional physical and mental health outcomes are shown in Table 2. The elbow plot of BIC and size-adjusted BIC values supported a three-class solution, and the AIC supported a three- and five-class solution. The adjusted LMRT  $p$ -value and BF  $p$ -value supported a two-class solution. Upon further examination, it was determined that the addition of the fourth and fifth classes explained variance in an unreliably small

**Table 3** Correlations for study scales

Scale	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>RAW scales</i>														
1. Living authentically	–													
2. Finding your calling	.58**	–												
3. Maintaining perspective	.45**	.36**	–											
4. Managing stress	.58**	.46**	.53**	–										
5. Interacting cooperatively	.55**	.42**	.31**	.34**	–									
6. Staying healthy	.38**	.27**	.20**	.46**	.17**	–								
7. Building networks	.46**	.58**	.21**	.39**	.46**	.25**	–							
<i>Healthy days measure</i>														
8. General health Rating	– 0.05	– 0.01	– 0.02	– 0.08	0.02	0.00	0.03	–						
9. Days poor physical health	– 0.05	– 0.02	– 0.06	– 0.06	– 0.05	– 0.02	0	.70**	–					
10. Days poor mental health	– 0.08	– 0.06	– 0.08	– 0.08	0	– 0.05	– 0.02	.66**	.67**	–				
11. Days activity restriction	– .24**	– .25**	– .30**	– .35**	– .18**	– .23**	– .15**	.32**	– 0.011	0.06	–			
<i>Pro-QOL</i>														
12. Compassion satisfaction	.63**	.67**	.40**	.49**	.49**	.31**	.41**	– .30**	– .06**	– .11*	– .29**	–		
13. Burnout	– .54**	– .55**	– .59**	– .56**	– .38**	– .27**	– .35**	.31**	– 0.01	0.09	.42**	– .72**	–	
14. Secondary traumatic stress	– .22**	– .20**	– .48**	– .25**	– .12*	0.01	– 0.01	0.06	– 0.01	– 0.01	.31**	– .25**	.58**	–

\* $p < .05$ , \*\* $p < .01$

**Table 4** Fit Statistics for one- through six-class solutions

Model (K-class)	LL	npar	AIC	CAIC	BIC	saBIC	AWE	LRTS	Adj LMR <i>p</i> -value	Bootstrapped (BLRT) <i>p</i> -value	BF (K, K+1)	cmP (K)	SIC	Exp(SIC-max)
1-class	- 4855.01	14	9738.02	9811.08	70,266.89	9752.65	9926.14	686.03	<.001	<.001	0.00	0.00	- 35,133	0
2-class	- 4512.00	22	9068.00	9182.81	65,414.24	8969.33	9363.61	285.55	0.11	<.001	0.00	0.00	- 32,707	0
3-class	- 4369.23	30	8798.45	8955.01	63,452.49	8663.90	9201.57	5.45	0.27	<.001	11,722,753,721,072.70	0.00	- 31,726	0
4-class	- 4366.50	38	8809.00	9007.31	63,512.68	8849.37	9319.62	197.85	0.12	<.001	0.00	0.00	- 31,756	0
5-class	- 4267.58	46	8627.16	8867.21	62,183.99	8420.85	9245.27	65.62	0.10	<.001	416,665,259.00	0.00	- 31,092	0
6-class	- 4234.77	54	8577.54	8859.34	8859.34	8335.35	9303.15	8469.54	0.81	<.001	0.00	1.00	- 4429.7	1

proportion of the sample (1.6%). Based on the elbow plot of BIC values and substantive interpretation for a one- through six-class solution (see Table 4), a three-class solution was chosen as the best fitting model. Entropy for the three-class solution was 0.79.

The profile plots of the estimated mean values for each domain of resilience at work are displayed in Fig. 2 (0 = *Strongly Disagree* to 6 = *Strongly Agree*). Based on the pattern of mean scores on the domains of workplace resilience, the following labels were given for each class: *Higher Capacity for Resilience* (i.e., *High*; 46.4%), with the highest means across all seven domains of resilience, *Moderate Capacity for Resilience* (i.e., *Moderate*; 45%), with the second highest means across all seven domains, and *Lower Capacity for Resilience* (i.e., *Low*; 8.6%), with the lowest means across the seven domains. Highest average scores for the *Higher* and *Moderate Capacity* groups were in the domains of Living Authentically, Finding Your Calling, Interacting Cooperatively, and Building Networks. Of note, the pattern of responses of those falling in the *Lower Capacity* group was similar except for lower scores in Finding Your Calling. Most educators fell into the *Higher* or *Moderate Capacity for Resilience* classes. The probability of educators being classified into each capacity for resilience class, given their classification into one resilience class, is presented in Table 5. The values of the bolded cells presented on the diagonal for each class indicate the probability that members of a given class would be classified into that class. The classification for each resilience capacity class was high (>0.80).

**Differences in Physical and Mental Health Outcomes Based on LPA Classification**

A modified BCH 3-step approach was utilized to examine relations between cross-sectional (i.e., proximal) outcomes of physical and mental health and educators’ workplace resilience. To test which physical and mental health outcomes differed in their mean outcome scores, a Wald Test was carried out on all between-class comparisons. Table 6 shows that there were significant differences between all classes across all outcomes in the expected direction. The *Higher Capacity for Resilience* group, on average, reported the fewest days of poor physical health ( $M = 2.98$ ,  $SE = 0.41$ ) and mental health ( $M = 3.09$ ,  $SE = 0.40$ ) per month, “very good” general health ( $M = 2.22$ ,  $SE = 0.07$ ), significantly less burnout ( $M = 19.07$ ,  $SE = 0.34$ ) and secondary traumatic stress ( $M = 10.63$ ,  $SE = 0.44$ ) than the other two groups, and significantly higher compassion satisfaction ( $M = 45.06$ ,  $SE = 0.31$ ) than both groups. Additionally, the *Moderate Capacity for Resilience* group indicated, on average, approximately five days of poor physical health per month ( $M = 4.77$ ,  $SE = 0.52$ ), six days of poor mental



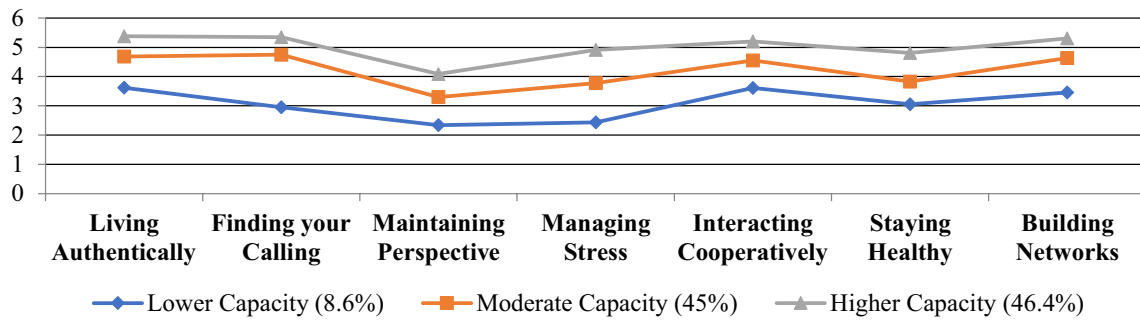


Fig. 2 Graph of component scores by resilience capacity profile

health per month ( $M = 6.20$ ,  $SE = 0.53$ ), “good” general health ( $M = 2.76$ ,  $SE = 0.06$ ), significantly more burnout ( $M = 24.66$ ,  $SE = 0.36$ ) and secondary traumatic stress ( $M = 22.87$ ,  $SE = 0.43$ ) and significantly less compas-

Table 5 Average probability of most likely latent class membership by latent resilience class

Class	Higher (1)	Moderate (2)	Lower (3)
1	<b>0.923</b>	0.077	0.000
2	0.012	<b>0.893</b>	0.095
3	0.000	0.096	<b>0.904</b>

sion satisfaction ( $M = 38.62$ ,  $SE = 0.41$ ) than the *Higher* group. Finally, the *Lower Capacity for Resilience* group, on average, indicated approximately eight days of poor physical health ( $M = 8.49$ ,  $SE = 1.41$ ) and almost 14 days of poor mental health ( $M = 13.95$ ,  $SE = 1.49$ ), “good” general health ( $M = 3.18$ ,  $SE = 0.17$ ), significantly more burnout ( $M = 32.39$ ,  $SE = 0.81$ ) and secondary traumatic stress ( $M = 25.72$ ,  $SE = 1.28$ ), and significantly less compassion satisfaction ( $M = 30.28$ ,  $SE = 1.06$ ) than the *Moderate* and *Higher* groups.

## Discussion

The current study adds to our understanding of how the education workforce’s capacity for resilience, which is closely tied to health, exists within a complex system of resources and demands. The health of staff working within schools varies with factors associated with professional well-being, including compassion satisfaction, burnout, and secondary traumatic stress. The link between burnout, secondary traumatic stress, and poorer health is important to consider as educators are currently tasked with supporting students and families struggling with trauma and adversity while also coping with their own stressors. Perhaps the most intriguing finding is that resilience capacity groups varied across all factors on the RAW scale, including those related to context versus those solely related to ability to manage stress. This finding indicates that systemic changes related to decreasing demands and increasing resources are necessary and align with calls to broaden educator support through systemic changes (Kangas-Dick & O’Shaughnessy, 2020; Skaalvik & Skaalvik, 2018).

The association between resilience capacity group and scores on the professional quality of life scales—Compassion Satisfaction, Burnout, and Secondary Traumatic Stress—support the idea that efforts to help the education workforce should follow best practices used for people whose work involves high levels of empathy and exposure

Table 6 Resilience profiles’ relations to physical and mental health and professional quality of life

Resiliency Profile	Days activity restriction	Days poor mental health	Days poor physical health	Health rating	Burnout	Compassion satisfaction	Secondary traumatic stress
	$M(SE)$	$M(SE)$	$M(SE)$	$M(SE)$	$M(SE)$	$M(SE)$	$M(SE)$
Lower $N = 43$	9.28 (1.36)*	13.95 (1.49)*	8.49 (1.41)*	Good 3.18 (.17)*	32.39 (.81)*	30.28 (1.06)*	25.72 (1.28)*
Moderate $N = 226$	4.47 (.49)*	6.20 (.53)*	4.77 (.52)*	Good 2.76 (.06)*	24.66 (.36)*	38.62 (.41)*	22.87 (.43)*
Higher $N = 233$	1.88 (.31)*	3.09 (.40)*	2.98 (.41)*	Very Good 2.22 (.06)*	19.07 (.34)*	45.06 (.31)*	20.63 (.44)*

\*Indicates significantly different from the other two classes at  $p < .05$

to trauma, such as frontline workers and mental health clinicians. The association of higher levels of compassion satisfaction with higher capacity for resilience is consistent with the idea that access to the emotional rewards of working in a helping profession is vital to maintain energy and motivation (Ludick & Figley, 2017; Santoro, 2011, 2018, 2019). Insights from the field have emphasized that being able to see the rewards of helping is key to maintaining energy and motivation.

The differentiation across groups in secondary traumatic stress scores warns that the emotional impact of working with students and families who have experienced trauma may contribute to educator burnout and attrition, and that this factor should be examined in further detail (Caringi et al., 2015). As school staff are key supports in the emotional lives of children, it is unsurprising that their well-being can suffer when children suffer. As so many communities experience trauma and adversity and trauma-informed care becomes more common in schools, we must consider how to support those professionals who are engaged in this work within schools (Christian-Brandt et al., 2020). In alignment with prior research, we found that school staff with lower levels of burnout and secondary traumatic stress had higher levels of compassion satisfaction and resources such as social support. This finding supports the idea that community and sense of self-efficacy can buffer against the impact of stress (Berger et al., 2021; Miller & Flint-Stipp, 2019). It is imperative that educators receive training that normalizes the experiences of sadness, anger, and other emotions when working with highly stressed children and families. Furthermore, the need to access resources to maintain well-being should be normalized, and easy access to these resources should be supported.

The fact that resilience capacity groups showed differentiation across all domains on the RAW scale, not solely those related to stress management, aligns with calls to consider support for school staff resilience from a broad perspective. The differentiation of scores on the Finding Your Calling and Living Authentically domains (see Fig. 2) supports the importance of alignment of personal values and work tasks in determining capacity for resilience, with school staff in the *Higher* and *Moderate* classes having substantially higher average scores when compared to school staff in the *Lower Capacity* class. Similar differences were seen in scores on domains related to social connectedness including Interacting Cooperatively and Building Networks, indicating the importance of interpersonal support. These results suggest that while helping the education workforce cope with stress is one point of intervention, a multi-pronged approach that uses all available resources to support the education workforce may be most effective. Also, acknowledging that external factors also play an important role in one's success in carrying out a task validates the experiences of the education

workforce and reduces the sense that they are being blamed for being unable to cope with unreasonable demands.

Fortunately, there is a wealth of information that can guide efforts to support morale and well-being for the education workforce (Casely-Hayford et al., 2022; Chiong et al., 2017; Glazer, 2018). Reports from veteran teachers that remained in challenging positions for years are key sources of guidance (Bullough & Hall-Kenyon, 2011; Sell, 2019). These reports indicate that having a sense of meaning in their work and feeling connected with others were key factors in being able to remain in their roles. This work indicates that one area of change might be to ensure that the daily tasks of the education workforce align with their mission and individual sense of purpose. That is, tapping into the reasons they entered the profession (e.g., connecting with students, using creativity to teach science) and then allowing their daily activities to reflect this “calling” may help decrease burnout and attrition within the education workforce (Santoro, 2018). This need may be particularly urgent as school staff are faced with highly stressed students and families while themselves coping with stressors related to disruptions from COVID-19 and intense social unrest.

Another resource and strength to build on to support the education workforce is their connections with others including students and families, peers, and school leadership. Building relationships with students and watching children learn and grow is a key source of joy for many educators (Chiong et al., 2017), but the demands of intensive curricula and pressures of testing can reduce or eliminate their ability to access these rewards. Reductions in high-pressure testing, decreased staff-to-student ratios, and an emphasis on flexibility and relationship building are changes that would align with this need (Maas et al., 2021). In addition to relationships with students, the education workforce needs to have a community of support among their peers and support from leadership that has similar values and enthusiasm for the work of supporting students and families (Chiong et al., 2017). The creation of time and spaces for the education workforce to connect with their colleagues, receive support, and celebrate success is essential for maintaining well-being and is often minimized due to time pressures. Many educators report feelings of isolation, as they remain in classrooms with few other adults for most of their working hours (Drago-Severson & Pinto, 2006; Hadar & Brody, 2010). This problem has been exacerbated by the COVID-19 pandemic, which has led to educators conducting classes via virtual platforms and staffing shortages that have increased workload. Increasing staff ratios to allow staff to take breaks and connect with others would be beneficial in decreasing daily stress and improving long-term morale and retention.

## Limitations and Future Directions

Next steps might include adapting these suggestions into changes and supports that can be integrated within the education setting, advocating for their use, testing how they work in “real world” situations, and further tailoring them with user feedback and results showing their impact. Intensive collaboration with educators will be essential in moving forward in this area. It is clearly time to move beyond suggesting stress management interventions to people with strength and purpose who are coping with unreasonable demands. Examining the feasibility of and actual impact of supportive changes and interventions using techniques such as those developed in implementation science will be key to ensuring sustainable and cost-effective change (Moir, 2018).

There is building evidence that racially minoritized educators and school staff experience stressors related to systemic racism embedded in the USA’s public education system and are more likely than white educators to consider leaving the field (Grooms et al., 2021; Mahatmya et al., 2021; Mason-Williams et al., 2022). There is an urgency to address this issue, as education professionals working with racially minoritized students are already disproportionately white (Race and Ethnicity of Public-School Teachers and Their Students, 2020). The lack of racially minoritized educators due to racialized school climate limits the ability of school systems to develop culturally sensitive and equitable practices. The burden for creating spaces within schools that racially minoritized professionals can thrive in must be placed on the system rather than expecting them to adapt to hostile or unaffirming spaces (Grooms et al., 2021; Mahatmya et al., 2021).

The results of the current study are limited by several factors, including lack of information regarding the supports available at the school level. To examine the impact of individual and systemic factors within the education workforce, it is necessary to include measures of system-level variables such as school climate and the level of support staff receive in areas such as opportunities for formal or informal mentorship, level of collaboration between staff and leadership in decision making, and other factors related to job satisfaction such as compensation, ability to use sick and vacation leave, and workload. Future research can build on these findings by collecting comprehensive data regarding both individual- and context-level factors related to resilience in teachers and school staff. Further, future research should explicitly consider the impact of systemic racism on burnout for racially minoritized school staff and test the impact of changes to reduce discrimination. For example, Mahatmya et al. (2021) and colleagues found that racially minoritized educators in environments less open to discussing racial conflict reported higher levels of burnout when compared to those in more open environments. It is essential that research about how to

best support workplace resilience be led by racially minoritized education staff.

Additionally, some fit statistics supported different latent profile solutions than the three-class solution ultimately chosen based on fit statistics and substantive interpretation. It is possible that the RAW Scale was not developed with the intention of classification or differentiation, as it was used in the current study. Future studies should examine the use of LPA with the RAW Scale with a larger, diverse group of education staff to better assess the fit of a three-class solution. Upon further evidence of a class solution with other samples, educators and school systems would benefit from research that explores how these groups differ based on several factors, including role at school, primary versus secondary school, and school resources and supports provided. Research into these factors will help to tailor needed policy, systemic change, and interventions for educators.

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