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Educators' Online Teaching Self-Efficacy and Compassion Fatigue During the COVID-19 Pandemic: The Dual Roles of "Connect"

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Guided by the job demands–resources model and social-cognitive theory, we examined how educator perceived school connectedness and their attempts to connect with school members (i.e., administrators, staff, students, and families) concurrently and interactively influenced educators' compassion fatigue and online teaching self-efficacy during distance learning in the Coronavirus disease (COVID-19) pandemic. Participants were 321 educators in a large, urban school district in northern California. Results of linear regression modeling suggested that educators with longer years of working in education and White educators reported higher levels of compassion fatigue than their counterparts. White educators also reported a lower level of online teaching self-efficacy than their counterparts. With the control of educators' gender, race/ethnicity, and years of teaching in education, educators' self-reported school connectedness is negatively associated with compassion fatigue. Educators' attempts to connect with students not only positively associated with compassion fatigue but also intensified the negative association between school connectedness and compassion fatigue. Moreover, educators' school connectedness and attempts to connect with administrators and staff both positively associated with online teaching self-efficacy. Also, educators' attempts to connect with families mitigated the positive association between school connectedness and online teaching self-efficacy. The findings highlight the importance of promoting educators' school connectedness in improving educators' occupational wellbeing. It also highlights that educators' school connectedness and their attempts to connect with certain group of school members mutually and interactively influence educators' compassion fatigue and online teaching self-efficacy.

Impact and Implications
The findings highlight the importance of promoting educators' school connectedness in improving educators' occupational wellbeing. It also highlights that educators' school connectedness and their attempts to connect with certain group of school members mutually and interactively influence educators' compassion fatigue and online teaching self-efficacy.

Keywords: online teaching self-efficacy, compassion fatigue, school connectedness, COVID-19

In recent months, the Coronavirus disease (COVID-19) pandemic has led to rapid changes in school systems across the world. In the state of California, schools transitioned to distance learning in March 2020. Teachers were given little time and limited support in navigating a transition that has altered, and, for many teachers also increased their job-related demands with detrimental effects on their wellbeing. Research prior to the COVID-19 pandemic has supported the importance of improving educators' teaching self-efficacy and reducing compassion fatigue to increase teacher retention and improve student outcomes. However, we have a minimal understanding about educators' online teaching self-efficacy and compassion fatigue in the COVID-19 pandemic context. There is also a dearth of scientific knowledge about the risk and protective factors associated with teachers' online teaching self-efficacy and compassion fatigue, both of which are important indicators of teachers' occupational wellbeing. To address these research gaps, we utilized the job demands–resources model (Bakker & Demerouti, 2017) and the social-cognitive theory (Bandura, 1989) as two theoretical frameworks to examine how educators' subjective perception of school connectedness and their actions of making attempts to connect with other school members served as risk or protective factors for educators' occupational wellbeing: As measured by their compassion fatigue and online teaching self-efficacy during the COVID-19 pandemic. We also examined how educators' occupational wellbeing varied educators in diverse demographic backgrounds.

Educators' Compassion Fatigue and Teaching Self-Efficacy

Research prior to the COVID-19 pandemic has found that educators' feelings of self-efficacy and compassion fatigue are

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important correlates of their occupational wellbeing (O'Brennan et al., 2017; Renshaw et al., 2015), resiliency in overcoming work-related obstacles (Aldridge & Fraser, 2016; Yost, 2006), commitment to the profession (Schaufeli & Bakker, 2004), teacher retention (Christian-Brandt et al., 2020), and student outcomes, including academic achievement (Caprara et al., 2006). Teaching self-efficacy refers to a teacher's self-reported belief in his or her ability to perform teaching-related tasks (Gist & Mitchell, 1992). Compassion fatigue is defined as the negative aspects of individuals' professional quality of life and includes two subconstructs (a) burnout, which is characterized by chronic work-related stress, exhaustion, frustration, and anger; and (b) secondary traumatic stress (STS), which is characterized by stress symptoms that helping professionals experience when witnessing the trauma of those they support (Stamm, 2010). Recently, the shift to online instruction has posed unprecedented challenges for teachers in how they support their own social and emotional wellbeing and the wellbeing of their students (Yang, 2021). Consequently, researchers have argued that teachers' mental health and retention issues could be exacerbated during the pandemic and distance learning (Green & Bettini, 2020; Hoang, 2020). However, limited empirical research has examined educators' occupational wellbeing during the pandemic, particularly their online teaching self-efficacy and compassion fatigue. This study aims to fill this time-sensitive research gap.

Perception of School Connectedness and Its Associations With Teaching Self-Efficacy and Compassion Fatigue Among Educators

Educators' perceptions of school connectedness pertain to their feelings of closeness to others at school, feeling happy and safe at school, feeling a part of the school community, and that others in the community treat them fairly (McNeely et al., 2002). Prior research has evaluated the association between teachers' perceptions of school connectedness and their teaching self-efficacy. For example, Aldridge and Fraser (2016) found that educators' feelings of support and connectedness to instructional leaders at their schools had the strongest influence on their teaching self-efficacy. Thereby, connectedness served as a job resource for educators' in this study who felt overwhelmed by job demands that posed a threat to their wellbeing in the form of teaching self-efficacy. Moreover, educators' affiliation with other staff members in the form of obtaining assistance, encouragement, and acceptance, have had significant positive influences on their teaching self-efficacy (Sehgal et al., 2017; Weiss, 1999). Educators' connections and positive interactions with their students also have been associated with higher self-efficacy and increased job satisfaction (Malinen & Savolainen, 2016).

Relatively fewer studies have examined the links between school connectedness and compassion fatigue than the links between school connectedness and teaching self-efficacy. Whereas feelings of school connectedness have been consistently shown to serve as a job resource when associated with teaching self-efficacy, the results are more mixed on the role that school connectedness plays (i.e., job resource or demand) on teachers' feelings of compassion fatigue. Some studies have shown that educators' perceptions of school connectedness were associated with its two subfactors: Burnout and secondary traumatic stress, respectively (Collie et al., 2012; O'Brennan et al., 2017). Other studies have found that greater connection to the school environment, including adequate access to resources, input in decision-making, and supportive supervisors, is related to lower workplace stress and reduced emotional exhaustion (Collie et al., 2012; Greenglass et al., 1996), illustrating how feelings of connectedness can function as a job resource. Conversely, feeling disconnected from the community in which one lives and works can heighten stress (Langley et al., 2014). A study by Caringi et al. (2015) illuminated how school connectedness, through supportive mentorship, could serve as a job resource or protective factor against feelings of secondary traumatic stress for teachers. In contrast, supervisory or punitive connection with colleagues can serve as an additional job demand linked to heightened teacher stress.

During the COVID-19 pandemic, educators face high risks of burnout as they adjust to new ways of teaching, balancing work and home life in the same building, and facing uncertainty related to school reopening (MacIntyre et al., 2020; Sokal et al., 2020). They are also facing high risks of secondary traumatic stress as many are struggling with the health and financial concerns of their own families and their students (Richard, 2020). Although educators' perceptions of school connectedness were associated with educators' teaching self-efficacy and compassion fatigue before the COVID-19 pandemic, there is a limited empirical understanding of their association in the distance learning and pandemic context. From the ecological system perspective, individuals' behaviors and adjustment outcomes are influenced by multiple levels of surrounding environments (Bronfenbrenner & Morris, 2006). The COVID-19 pandemic and its subsequent crises, including the shift from in-person to distance education, have created a unique and new layer of ecological context, which influence both educators' social interactions with others, their job activities, and wellbeing. The change of educators' ecological system could lead to a change in educators' perceptions of school connectedness. However, no empirical studies have examined how educators' perception of school connectedness influences their teaching self-efficacy and compassion fatigue in the COVID-19 and distance learning context. We aim to address this question in the present study utilizing the JD-R framework and social-cognitive theory.

Moderating Role of Teachers' Attempts to Connect on the Associations Between Teaching Self-Efficacy and Compassion Fatigue

To understand educators' sense of connectedness with schools, it is important to examine not only their subjective perception of school connectedness but also their action of attempting to connect with other members of the school community (i.e., students, families, colleagues, and administrators). According to Bandura's social-cognitive theory (Bandura, 1989), individuals' behaviors, cognitive perceptions, other personal factors, and environmental factors all operate as interacting determinants of individuals' adjustment outcomes and have a bidirectional influence on one another. Based on the social-cognitive perspective, we argue that an educators' subjective perception (i.e., cognition) of school connectedness is distinct from his/her proactive attempts to communicate with members of school communities (i.e., behavior). Based on the interactive nature of behaviors, perceptions, and other personal factors as posited by social-cognitive theory, we also argue that educators'

subjective perceptions of school connectedness interact with their action of connecting with others to influence their wellbeing (i.e., online teaching self-efficacy and compassion fatigue).

The interactive influences of educators' perceptions of school connectedness and their attempts to connect with school community members on educators' levels of compassion fatigue and teaching self-efficacy can be analyzed with the JD-R model. According to the JD-R model, job characteristics are classified into two categories: Job resources and job demands. Each category influences individuals' wellbeing and performance through the motivational and health impairment processes, respectively (Bakker & Demerouti, 2017). In the motivational process, job resources may serve as both extrinsic and intrinsic motives and assets that prompt individuals to engage in their jobs and achieve better performance (Bakker & Demerouti, 2017). In the health impairment process, high job demands require more effort and may drain individuals' energy, resulting in exhaustion and increased health problems (Bakker & Demerouti, 2017). Previous research has shown that job resources and demands interacted with each other to influence educators' wellbeing (Dicke et al., 2018; Han et al., 2020). The COVID-19 and distance learning context has drastically changed the nature of educators' job demands and resources. Thus, empirical research is needed to illuminate how teachers' attempts to connect with school members and their perception of school connectedness function as resources and job demands to interactively influence educators' wellbeing.

Purpose of This Study

Drawing on both the social-cognitive theory and the JD-R framework, in this study, we examined two research questions: (a) How do educators' perceptions of school connectedness and their attempts to connect with others in the school community influence their online self-efficacy and compassion fatigue? and (b) How do educators' school connectedness and their attempts to connect with different school members interact with each other to influence online teaching self-efficacy and compassion fatigue, respectively? Considering the diverse demographic backgrounds of educator participants in our study, we also examined the influences of some important demographic factors (i.e., gender, race/ethnicity, and years of teaching experiences) on educators' online self-efficacy and compassion fatigue before addressing the two main research questions.

Guided by prior literature, we hypothesized that demographic variables, including educators' years of experience and race/ethnicity, would impact their professional wellbeing as measured by teaching self-efficacy and compassion fatigue. Specifically, we hypothesized that teachers with more experience would report less compassion fatigue, as reported in research by Boscarino et al. (2004) and Craig and Sprang (2010). We hypothesized that an educator's race/ethnicity would impact their feelings of professional wellbeing but did not specify the nature of this influence as prior literature has yielded inconclusive findings (Boscarino et al., 2004; Lee et al., 2015). Based on the JD-R framework, we hypothesized that teachers' feelings of school connectedness would serve as a resource in promoting educators' online teaching self-efficacy and reducing their compassion fatigue. Moreover, based on both the social-cognitive theory and the JD-R model, we hypothesized that perceived school connectedness and the action of making connections do not independently influence educators' wellbeing. Instead, they will interact with each other to influence educators' self-efficacy and compassion fatigue. Due to the limited research in this area, we have no specific hypotheses about the directions and relative magnitudes of the interaction effects. We also hypothesized that teachers' attempts to connect with other school community members could function as both a job resource and demand, depending on who the teachers attempted to connect with.

Method

Participants and Data Collection Procedure

Participants in the study included 321 educators recruited from a large urban district in Northern California. The online survey data collection took place at the end of the 2019–2020 school year between May and the middle of June in 2020. The survey was distributed by the school district-wide social-emotional learning support team to all educators across the district. Participants completed the survey voluntarily without incentives. A research brief based on the aggregated data was provided to the district after the study was completed. Descriptive statistics of the participants and their demographic backgrounds are provided in Table 1.

Measures

Compassion Fatigue

The modified brief version of the compassion fatigue subscale of the Professional Quality of Life Scale (Stamm, 2010) measured educators' perception of their compassion fatigue during distance education and shelter-in-place. The scale was a 4-point Likert scale (1 = *strongly disagree,* 2 = *somewhat disagree*, 3 = *somewhat agree*, 4 =*strongly agree*). Based on the full sample in the present study, results of confirmative factor analyses (CFA) suggested that the scale with a one-factor model achieved an adequate model fit, $\chi^2 = 1.753$ [$df = 2$], $p < .001$, Comparative Fit Index (CFI) = 1.000, Root Mean Square Error of Approximation (RMSEA) = 0.000, 90% Confidence Intervals (CIs) [0.000, 0.131], Standardized Root Mean Square Residual (SRMR) = .024. Moreover, this scale's reliability as assessed by the McDonald's omega value was .76 for the total sample, .75 for elementary school educators, .84 for middle school educators, .74 for high school educators, and .70 for educators in mixed grade levels.

Online Teaching Self-Efficacy

The four-item Online Teaching Self-Efficacy Scale (DTSES) scale was created based on the modification of the teaching self-efficacy subscale (4 items) from the Teacher Subjective Well-being Questionnaire (Renshaw et al., 2015). The DTSES was used to measure educators' perceptions of their distance education self-efficacy. The DTSES was a 4-point Likert scale (1 = *strongly disagree,* 2 = *somewhat disagree*, 3 = *somewhat agree*, 4 = *strongly agree*). Results of reliability analysis and confirmatory factor analysis supported DTSE's reliability and validity. More specifically, results of CFA based on the full sample in the present study suggested the DTSES with a one-factor model achieved an adequate model fit based, $\chi^2 = 138.97$ [$df = 2$], $p < .001$, CFI = 0.995, RMSEA = 0.036, 90% CIs [0.000, 0.148], SRMR = .019. Based on the data in the present study, the scale's reliability as assessed by the McDonald's omega value was .84 for the total sample, .85 for

Table 1
Demographic Information for Educators in the Sample

	Participants in the study											
	Elementary		Middle		High		Mixed grade levels					
Full sample and sub-groups	*n*	%	*n*	%	*n*	%	*N*	%	Total sample		District full sample	
Full sample	187	100.00	49	100.00	61	100.00	24	100.00	321	100	4,840	100
Gender												
Male	19	10.16	12	24.49	13	21.31	4	16.67	48	14.95	1,432	29.59
Female	158	84.49	35	71.43	46	75.41	17	70.83	256	79.75	3,407	70.39
Not identified/nonbinary	10	5.35	2	4.08	2	3.28	3	12.50	17	5.30	1	0.07
Race/ethnicity												
Caucasian	98	52.41	28	57.14	30	49.18	18	75.00	174	55.77	1,581	33.80
African American	23	12.30	6	12.24	6	9.84	1	4.17	36	11.54	1,569	32.50
Hispanic/Latino	24	12.83	5	10.20	13	21.31	2	8.33	44	14.10	900	17.80
Asian	20	10.70	5	10.20	4	6.56	1	4.17	30	9.62	549	13.00
Other race/ethnicity	6	3.21	0	0.00	4	6.56	0	0.00	10	3.21	241	2.89
Multiracial	16	8.56	5	10.20	4	6.56	2	8.33	27	8.65		
Positions												
Classroom teacher	166	88.80	41	83.70	42	68.90	15	62.50	264	82.24	2,284[a]	47.19
Instructional or pupil support professional staff	13	7	7	14.30	14	23.00	7	29.20	41	12.77	1,649	34.07
Other positions	8	4.3	1	2.0	5	8.2	2	8.3	16	4.98	907	18.74
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Years working in education	14.55	9.31	11.98	9.01	13.48	9.89	14.71	14.45	13.96	9.84	—	—

Note. *M* = mean; *SD* = standard deviation. According to the information provided by California Department of Education, during 2018–2019 school year, the gender and ethnic distribution of public-school teachers were: Male teachers = 26.7%; female teachers = 73.3%; Caucasian teachers = 61.2%; African American teachers = 3.9%; Hispanic teachers = 21.1%; other or multirace/ethnicity = 7.9%.
[a] According to the demographic information reported by the participating school district, the total numbers of teachers (N = 2,284) reported in the table include the numbers of principals and supervisors, but the participants in the study do not include principals and supervisors.

elementary school educators, .81 for middle school educators, .82 for high school educators, and .85 for educators in mixed grade levels.

School Connectedness

A three-item Distance Learning School Connectedness Scale (DLSCS) was created by modifying the school connectedness subscale (4 items) from the Teacher Subjective Well-being Questionnaire (Renshaw et al., 2015) to measure educators' perceptions of their distance education self-efficacy. The DLSCS was a 4-point Likert scale (1 = *strongly disagree,* 2 = *somewhat disagree*, 3 = *somewhat agree*, 4 = *strongly agree*). Results of CFA suggested the DTSES achieved adequate model fit based on the full sample, χ^2 = 5.45 [*df* = 2], *p* <.001, CFI = 0.981, RMSEA = 0.076, 90% CIs [0.000, 0.156], SRMR = .020. In this study, the scale's reliability as assessed by the McDonald's omega value was .81 for the total sample, 0.79 for elementary school educators, .81 for middle school educators, .81 for high school educators, and .90 for educators in mixed grade levels.

Attempts to Connect

A four-item Likert scale measured the frequency of educators' attempts to connect with four types of school members (i.e., students, parents, teachers/staff, and administrators; 1 = *0 times a week,* 2 = *1–2 times a week* 3 = *3–4 times a week*, 4 = *5 or more times a week*). Each type of "attempts to connect" was measured by one item, thus the McDonald's omega value was not reported.

Other Demographics

Educators also self-reported other demographic information, including gender, race/ethnicity, years of teaching experiences, and position types. These variables were included in the following regression analyses as control variables.

Data Analysis Procedure

Statistical analyses were conducted in three stages. In the first stage, the structural validations of the Online Teaching Self-Efficacy Scale, Compassion Fatigue Scale, and Distance Learning School Connectedness Scale were examined using CFA in Mplus 8.10. The reliability of all four Likert scales used in the study was also examined by calculating the scales' McDonald's omega values using SPSS 26. The validity and reliability statistics of the three Likert scales are reported in the Measures section above. In the second stage, descriptive analyses were conducted using SPSS to examine the means and standard deviations of the key continuous variables used in the analyses and their correlations. The frequency analyses were also conducted to examine educators' response patterns of individual items from the four set of Likert scales used in the study. In the third stage, two sequential sets of linear

regression models were used to examine the main and moderating effects, with compassion fatigue and online teaching self-efficacy as outcome variables. In Model 1, gender, race/ethnicity, grade levels, and years of working in education were added as the covariates to examine the main effects of demographic factors on the outcome variables compassion fatigue and online teaching self-efficacy, respectively. In Model 2, school connectedness was added to Model 1 to examine their concurrent main effects on compassion fatigue and online teaching self-efficacy, respectively. In Models 3.1–3.4, one of the four types of Attempts to Connect and the interaction terms (Connectedness × Attempts to connect with Teachers/Staff, Connectedness × Attempts to connect with Administrators, Connectedness × Attempts to connect with Students, and Connectedness × Attempts to connect with Families,) were added to Model 2 to examine the main effect and moderating effect of each type of Attempt to Make Contact in the association between school connectedness and compassion fatigue/online teaching self-efficacy, respectively.

Missing Data and Response Rate

There were 24 educators (7.5% of the total sample) missing responses on School Connectedness, Attempts to Connect, Online Teaching Self-Efficacy Scale, and Compassion Fatigue Scale, and 17 educators (5.3% of the total sample) missing responses on Attempts to connect with scale. Accordingly, 24 educators (7.5%) of the total sample had missing information. Little's Missing Completely at Random (MCAR) test conducted using SPSS showed that these variables used in our study had data missing randomly, $\chi^2 = 3.30$, $df = 5$, $p = .65$. Thus, listwise deletion was suitable for handling the missing data in our study. All educators working in district-run schools (full sample = 2,284) were eligible to participate in the study. The survey response rate based on the total sample was 14.05%.

Results

Results of Preliminary Analyses

Correlational analyses among the continuous variables used in the study showed that teacher-reported school connectedness had significant and positive correlation with distance teaching self-efficacy ($r = .13$) and a significant and negative correlation with educators' years of working in education ($r = -.13$), but not with compassion fatigue. The frequency of educator-reported attempts to connect with had significant and positive correlations with online teaching self-efficacy ($r = .15$) and compassion fatigue ($r = .13$), but not educators' years of working in education. Online teaching self-efficacy had a significant negative correlation with compassion fatigue ($r = -.30$). Educators' years of working in education significantly negatively correlated with compassion fatigue ($r = -.20$), but not with online teaching self-efficacy. Regression analyses also showed no multicollinearity issues among the predicting variables included in our study (Variance Inflation Factor [VIF] = 1.10–2.02).

The percentages of educators reporting favorable responses (i.e., "somewhat agree" or "strongly agree") to the items of the Likert scales used in the study were 57.8 %–69.5% for the four items in the Distance Learning Online Teaching Self-Efficacy Scale, 39.1%–73.8% for the four items in the Compassion Fatigue Scale, 83.4%–88.5%. for the four items in the School Connectedness Scale. The percentages of educators reporting "5 or more times a week" was 28.9% for the item assessing educators' attempts to connect with other teachers/staff, 8.6% for the item assessing educators' attempts to connect with administrators/supervisors, 65.8% for the item assessing educators' attempts to connect with students, and 32.1% for the item assessing educators' attempts to connect with family members.

Main Effects of Demographic Factors on Compassion Fatigue and Online Teaching Self-Efficacy

As shown in Table 2, educators with more years of teaching experience reported significantly lower levels of compassion fatigue than educators with fewer years of teaching experience. White educators reported significantly higher compassion fatigue than Black educators and educators with multiracial backgrounds, but not other racial/ethnic groups. There was no significant difference in educators' compassion fatigue across educators' gender and grade levels taught.

As shown in Table 3, there was no significant difference in online teaching self-efficacy between educators with fewer or more years of teaching experience. White educators reported significantly lower online teaching self-efficacy than Black educators, but not other racial/ethnic groups. There was no significant difference in educators' online teaching self-efficacy across educators' gender and grade levels taught.

Interactive Influences of School Connectedness and Attempts to Connect on Compassion Fatigue

As shown in Table 2, educators' self-reported school connectedness had a negative association with their compassion fatigue upon controlling for educators' demographic factors (i.e., race/ethnicity, gender, years of teaching, and grade levels). Among the four types of attempts to connect with school members, educators' attempts to connect with students had a significant and negative association with educators' compassion fatigue. Moreover, educators' attempts to connect with students had a significant moderating effect in the association between school connectedness and compassion fatigue. As shown in Figure 1, the magnitude of the negative association between school connectedness and compassion fatigue was intensified among educators with more frequent attempts to connect with students.

Interactive Influences of School Connectedness and Attempts to Connect on Online Teaching Self-Efficacy

Educators' self-reported school connectedness had a positive association with their online teaching self-efficacy upon controlling for educators' demographic factors (i.e., race/ethnicity, gender, years of teaching, and grade levels). Among the four types of attempts to connect with school members, educators' attempts to connect with staff and administrators had significant and positive associations with educators' online teaching self-efficacy. Moreover, educators' sense of school connectedness had a significant moderating effect in the association between attempts to connect with families and online teaching self-efficacy. As shown in Figure 2, the magnitude of the positive association between school connectedness and online teaching self-efficacy was mitigated among educators with more frequent attempts to connect with families.

Table 2

Statistical Estimates of Multilevel Main Effects and Moderation Effects With Compassion Fatigue as Outcome Variable

Effects and variables examined	Model 1 unstandardized coefficients (*SE*)	Model 2 unstandardized coefficients (*SE*)	Model 3.1 unstandardized coefficients (*SE*)	Model 3.2 unstandardized coefficients (*SE*)	Model 3.3 unstandardized coefficients (*SE*)	Model 3.4 unstandardized coefficients (*SE*)
Intercepts	3.00 (0.18)***	3.00 (0.18)***	3.00 (0.18)***	3.02 (0.18)***	3.08 (0.17)***	3.00 (0.17)***
Main effects of demographics						
Sex (male as reference)	−0.06 (0.14)	−0.04 (0.14)	−0.04 (0.14)	−0.04 (0.14)	−0.14 (0.14)	−0.03 (0.14)
Years of teaching	−0.01 (0.01)**	−0.02 (0.01)**	−0.02 (0.00)**	−0.02 (0.00)**	−0.01 (0.00)**	−0.01 (0.00)**
Race_D1 (Hispanic vs. White, White as reference)	−0.14 (0.14)	−0.12 (0.14)	−0.14 (0.14)	−0.12 (0.15)	−0.11 (0.15)	−0.17 (0.15)
Race_D2 (Asian vs. White, White as reference)	0.04 (0.17)	0.00 (0.17)	0.01 (0.16)	0.00 (0.17)	0.05 (0.17)	0.01 (0.17)
Race_D3 (Black vs. White, White as reference)	−0.38 (0.16)*	−0.37 (0.16)*	−0.32 (0.16)*	−0.36 (0.16)*	−0.28 (0.16)+	−0.37 (0.16)*
Race_D4 (Multiracial vs. White, White as reference)	− 0.31 (0.17)+	− 0.36 (0.17)+	−0.37 (0.17)*	−0.36 (0.17)*	−0.40 (0.17)*	−0.38 (0.17)*
Race_D5 (other vs. White, White as reference)	0.20 (0.42)	0.13 (0.42)	0.08 (0.42)	0.14 (0.42)	−0.02 (0.41)	0.17 (0.41)
Grade level_D1 (elementary vs. middle, middle as reference)	0.00 (0.13)	0.04 (0.13)	0.06 (0.13)	0.04 (0.13)	0.03 (0.13)	0.04 (0.13)
Grade level_D2 (high vs. middle, middle as reference)	−0.04 (0.16)	−0.06 (0.16)	−0.02 (0.16)	−0.06 (0.16)	−0.04 (0.16)	−0.05 (0.16)
Grade level_D3 (mixed vs. middle, middle as reference)	0.01 (0.20)	0.04 (0.20)	0.05 (0.20)	0.04 (0.20)	0.13 (0.20)	0.02 (0.20)
Main effects of school connectedness and attempts to connect on compassion fatigue						
School connectedness		−0.20 (0.08)*	−0.21 (0.18)**	−0.20 (0.08)*	−0.17 (0.08)*	−0.21 (0.08)**
Attempts to connect with staff			0.10 (0.06)			
Attempts to connect with administrators				0.00 (0.06)		
Attempts to connect with students					0.18 (0.06)**	
Attempts to connect with families						0.07 (0.05)
Interactive effects of school connectedness and attempts to connect on compassion fatigue						
Connectedness × Attempts to connect with staff			0.06 (0.10)			
Connectedness × Attempts to connect with administrators				0.02 (0.10)		
Connectedness × Attempts to connect with students					−0.24 (0.11)*	
Connectedness × Attempts to connect with families						0.13 (0.09)
Model fit						
R^2(*SE*)	0.08 (0.70)*	0.10 (0.70)*	.12 (0.48)**	0.10 (0.48)*	0.15 (0.46)***	0.12 (0.48)**

Note. *SE* = standard error; Race_D1 = dummy-coded race/ethnicity variable (Hispanic = 1, not Hispanic = 0); Race_D2 = dummy-coded race/ethnicity variable (Asian = 1, not Asian = 0); Race_D3 = dummy-coded race/ethnicity variable (Black = 1, not Black = 0); Race_D4 = dummy-coded race/ethnicity variable (multiracial = 1, not multiracial = 0); Race_D5 = dummy-coded race/ethnicity variable (other race/ethnicity = 1, not other race/ethnicity =0). Grade level_D1 (elementary = 1, not elementary = 0); Grade level_D1 (elementary school = 1, not elementary school =0); Grade level_D2 (high school = 1, not high school =0); Grade level_D3 (mixed grade levels = 1, Not mixed grade levels = 0).

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

Table 3

Statistical Estimates of Multilevel Main Effects and Moderation Effects With Online Teaching Self-Efficacy as Outcome Variable

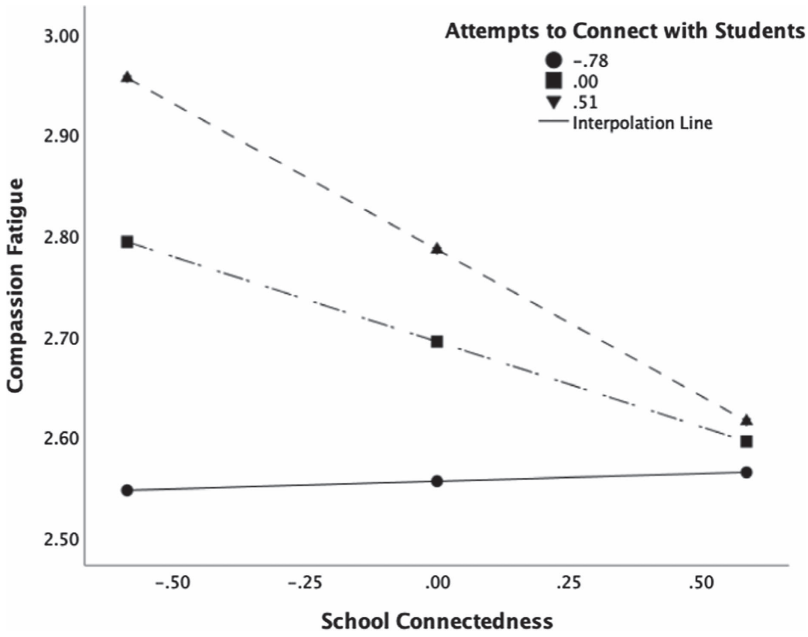
Effects and variables examined	Model 1 unstandardized coefficient (*SE*)	Model 2 unstandardized coefficient (*SE*)	Model 3.1 unstandardized coefficient (*SE*)	Model 3.2 unstandardized coefficient (*SE*)	Model 3.3 unstandardized coefficient (*SE*)	Model 3.4 unstandardized coefficient (*SE*)
Intercepts	0.20 (0.18)***	0.20 (0.18)***	2.42 (0.18)***	2.40 (0.18)***	3.08 (0.17)***	2.46 (0.17)***
Main effects of demographics						
Sex (male as reference)	0.14 (0.14)	0.13 (0.14)	0.11 (0.14)	0.16 (0.14)	0.11 (0.14)	0.10 (0.14)
Years of teaching	0.00 (0.01)	0.00 (0.01)	0.00.(0.00)	0.01.(0.00)	0.01.(0.00)	0.01.(0.00)
Race_D1 (Hispanic vs. White, White as reference)	0.27 (0.15)	0.25 (0.15)	0.23 (0.14)	0.21 (0.14)	0.25 (0.14)+	0.25 (0.14)+
Race_D2 (Asian vs. White, White as reference)	0.25 (0.17)	0.28 (0.17)	0.27 (0.16)	0.27 (0.16)+	0.29 (0.16)+	0.29 (0.16)+
Race_D3 (Black vs. White, White as reference)	0.38 (0.16)*	0.37 (0.16)*	0.41 (0.16)**	0.37 (0.16)*	0.38 (0.16)**	0.40 (0.16)**
Race_D4 (Multiracial vs. White, White as reference)	0.23 (0.17)	0.28 (0.17)	0.25 (0.17)	0.28 (0.17)+	0.28 (0.17)	0.30 (0.17)+
Race_D5 (other vs. White, White as reference)	0.64 (0.43)	0.70 (0.42)	0.61 (0.42)	0.62 (0.42)	0.68 (0.42)	0.53 (0.42)
Grade level_D1 (elementary vs. middle, middle as reference)	0.05 (0.13)	0.02 (0.13)	0.06 (0.13)	0.02 (0.13)	0.02 (0.13)	0.01 (0.13)
Grade level_D2 (High vs. Middle, Middle as reference)	−0.28 (0.16)	−0.26 (0.16)	−0.22 (0.16)	−0.25 (0.16)	−0.25 (0.16)	−0.23 (0.16)
Grade level_D3 (mixed vs. middle, middle as reference)	−0.12 (0.21)	−0.14 (0.20)	−0.11 (0.20)	−0.13 (0.20)	−0.12 (0.20)	−0.12 (0.20)
Main effects of school connectedness and attempts to connect on online teaching self-efficacy						
School connectedness		0.19 (0.08)*	0.17 (0.08)*	0.16 (0.08)+	0.19 (0.08)*	0.19 (0.08)**
Attempts to connect with staff			0.14 (0.06)*			
Attempts to connect with administrators				0.17 (0.06)**		
Attempts to connect with students					0.03 (0.06)	
Attempts to connect with families						0.00 (0.05)
Interactive effects of school connectedness and attempts to connect on online teaching self-efficacy						
Connectedness × Attempts to connect with staff			−0.02 (0.10)			
Connectedness × Attempts to connect with administrators				−0.12 (0.10)		
Connectedness × Attempts to connect with students					0.01 (0.11)	
Connectedness × Attempts to connect with families						−0.22 (0.09)**
Model fit						
R^2(*SE*)	0.08 (.70)*	0.10 (0.70)*	.12 (0.48)**	0.10 (0.48)*	0.10 (0.49)*	0.13 (0.48)**

Note. *SE* = standard error; Race_D1 = dummy-coded race/ethnicity variable (Hispanic = 1, not Hispanic = 0); Race_D2 = dummy-coded race/ethnicity variable (Asian = 1, not Asian = 0); Race_D3 = dummy-coded race/ethnicity variable (Black = 1, not Black = 0); Race_D4 = dummy-coded race/ethnicity variable (multiracial = 1, not multiracial = 0); Race_D5 = dummy-coded race/ethnicity variable (other race/ethnicity = 1, not other race/ethnicity = 0); Grade level_D1 (elementary = 1, not elementary = 0); Grade level_D1 (elementary school = 1, not elementary school = 0); Grade level_D2 (high school = 1, not high school = 0); Grade level_D3 (mixed grade levels = 1, not mixed grade levels =0); Grade level_D1 (elementary = 1, not elementary = 0); Grade level_D1 (elementary school = 1, not elementary school = 0); Grade level_D2 (high school = 1, not high school =0); Grade level_D3 (mixed grade levels = 1, not mixed grade levels =0).

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

Figure 1

Moderating Effect of Attempts to Connect With Students in the Association Between School Connectedness and Compassion Fatigue



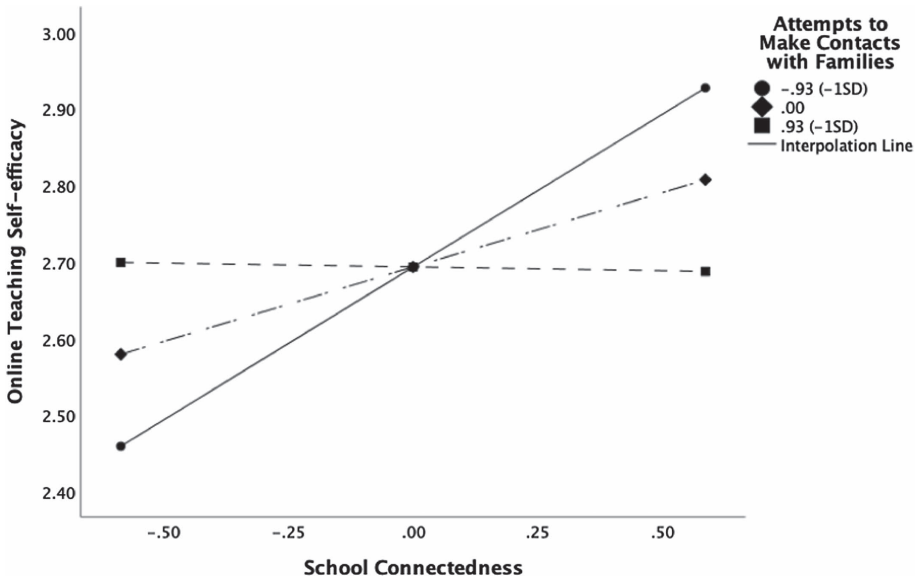
Discussion

Influences of Demographics

In this study, we found that educators who had more years of teaching experience reported lower levels of compassion fatigue than newer educators. This is consistent with some previous studies, in which more experienced or older helping professionals, including psychiatrists, social workers, and therapists, reported lower levels of burnout and higher levels of compassion satisfaction (Boscarino et al., 2004; Craig & Sprang, 2010). However, it contradicted the findings in other studies, in which healthcare professionals with more years of experience were at higher risk for compassion fatigue than healthcare professionals with fewer years of experience (Potter et al., 2010; Kelly et al., 2015). The mixed findings might be

Figure 2

Moderating Effect of Attempts to Connect With Families in the Association Between School Connectedness and Online Teaching Self-Efficacy



explained by differences in the job demands of different professional groups and individuals' abilities to cope with work stress.

We also found that White educators reported significantly higher compassion fatigue and significantly lower distance learning self-efficacy than Black educators. Prior literature on demographic factors relating to compassion fatigue is inconclusive. Some studies found no differences in ethnicity (Boscarino et al., 2004). In contrast, one study examined a population of genetic counselors and found the opposite of our finding—that non-White counselors were at higher risk for compassion fatigue (Lee et al., 2015). Our current findings may reflect the idea that minority status could serve as a protective factor that buffers against compassion fatigue (Meyer, 2003). Because compassion fatigue relates to increased burnout (Hoffman et al., 2007; Koenig et al., 2018), which is negatively associated with self-efficacy (Brouwers & Tomic, 2000; Skaalvik & Skaalvik, 2007), it is not surprising that White educators in our sample reported lower distance teaching self-efficacy and higher compassion fatigue.

Because the present study was conducted in late May and early June 2020 right after George Floyd's murder and other murders of Black Americans by police officers, it is also possible that the nation-wide reckoning with systemic racism has affected White and Black educators in different ways. In response to an open-ended question about compassion fatigue, one White teacher wrote,

> As I live a very privileged life, [. . .], I see the act of sheltering in place is a very privileged idea, it assumes you have a safe, loving environment, one that is healthy and can nourish the amount of people living in it. [. . .] There are many families living in toxic environments, physically, emotionally, and due to increased exposure to toxic chemicals and pesticides. I fear for their lives and futures and am working to heal my white guilt so I may transform white privilege into action to end white supremacy.

White educators may have reported higher compassion fatigue than Black educators because they have not previously had to directly reckon with such issues as systemic racism, while their Black colleagues have had to grapple with these issues over time. Although we have provided some possible interpretations of the finding that White educators reported significantly higher compassion fatigue and lower distance teaching self-efficacy than Black educators, it is important to note that our sample of teachers was comprised of a majority of White educators. Further research is needed to explore this finding and possible explanations for these differences in educators' experiences.

Interactive Influences of School Connectedness and Attempts to Connect on Compassion Fatigue

Supported by the JD-R model, school connectedness functioned as a job resource that facilitated the motivational process. Similarly, previous studies have found that teachers who feel more connected to their school and perceive higher levels of social support report lower levels of burnout, stress, and compassion fatigue (Collie et al., 2012; O'Brennan et al., 2017). Additionally, when teachers and staff feel supported by and connected with their administration, they tend to demonstrate higher levels of commitment, more collegiality, and, consequently, increased retention (Singh & Billingsley, 1998). In sum, these findings suggest that school connectedness may be an important preventative factor for educator burnout, as the lack of such relational support can serve as a job stressor that contributes to emotional exhaustion and disengagement from work (Demerouti et al., 2001). The protective role of school connectedness on educators' levels of compassion fatigue found in the present study provides additional empirical support for school-based prevention efforts that have focused on enhancing feelings of connectedness among staff members as a way to create a positive school climate, better engage students and staff, and prevent faculty turnover (Thapa et al., 2013).

Consistent with our hypotheses, making attempts to connect with others functioned as a job resource or demand for compassion fatigue, depending on the type of school members educators made attempts to connect with. Among the four types of school members, attempting to connect with students functioned as the most salient and only significant risk factor for increasing educators' compassion fatigue. It is possible that with more frequent attempts to connect with students, teachers could have more exposure to students' respective challenges and trauma, which could increase teachers' secondary traumatic stress. As one teacher in our sample stated in his/her response to the survey's open-ended questions,

> Now I have more stress about the health and safety of my students. It's in my home every day now, when school was in session I had coping mechanisms and routines to try and separate the trauma of the day with my families' intimate home space.

It is also possible that the frequent attempts to connect with students made educators feel that they were always on call for work. For example, one teacher anecdotally reported that "I also found myself finding it difficult to set boundaries, being constantly available for my families. This led to stress as I always felt "on," which is not aligned with what it was like before." In addition, the frequent attempts to get connected with students might indicate that educators had difficulty connecting with their students in the online class setting. The sense of lack of control and inability to successfully support students is a source of teacher stress (Koenig et al., 2018). For example, one teacher in our current sample shared that, "It is crisis learning not distance learning. I am stressed about my students' safety and wellbeing more than ever. I am stressed about all the things I can't control." Although we have presented preliminary findings on educators' attempts to connect with different school members and the impact of attempted connection on educators' wellbeing, it is important to note that these results are based on an exploratory set of questions. Further research is needed to validate the items used to measure educators' attempts to connect and to examine the construct of attempted contact on elements of teacher wellbeing.

Although educators' more frequent attempts to connect with their students increased educators' risk of compassion fatigue, it enhanced the preventative role of school connectedness on educators' compassion fatigue. It is possible that educators' attempts to connect with students functioned as a "double-edged sword": More attempts to connect with students were associated with more compassion fatigue, but at the same time, led to a greater buffering effect of school connectedness against the risk of compassion fatigue. It is also possible that educators who made more frequent attempts to connect with students hold a stronger belief in the importance of school connectedness than those who made less frequent attempts to connect, thereby contributing to the stronger preventative effect of school connectedness on compassion fatigue.

In addition, this finding might suggest that the term "connect" took on a different meaning depending on if it was a subjective perception an educator held about their relationships with their respective school communities or an attempted action to connect.

Interactive Influences of School Connectedness and Attempts to Connect on Online Teaching Self-Efficacy

Consistent with our hypothesis, school connectedness was positively associated with online teaching self-efficacy. Educators who feel more connected to colleagues may have higher self-efficacy through the means of emotional wellbeing and more opportunities for engagement in vicarious experiences and social persuasion (Tschannen-Moran & Hoy, 2007). Research prior to the COVID-19 pandemic has shown that educators' sense of school connectedness was positively associated with their teaching efficacy (Aldridge & Fraser, 2016). Our findings demonstrated that the promotive influence of school connectedness on teaching self-efficacy applies to not only in-person but also distance-learning contexts.

Among the four types of attempts to connect with school members, educators' more frequent attempts to connect with staff and administrators were significantly associated with higher levels of online teaching self-efficacy. This is consistent with previous findings that teacher collaborative learning contexts are linked to increased teaching self-efficacy (Chong & Kong, 2012; Mintzes et al., 2013). It is also noteworthy that this study was conducted in late Spring 2020 when educators were still transitioning to distance learning. During this period, educators needed lots of guidance and technical support to set up their distance learning platforms. Thus, the contact with administrators and other staff may have served as a key resource to build educators' distance teaching self-efficacy.

Interestingly, although attempts to connect with administrators and staff helped promote educators' distance teaching self-efficacy, these attempts did not influence the magnitude of the promotive role of school connectedness on distance teaching self-efficacy. The insignificant interaction might indicate that educators' attempts to connect with staff and administrators had a distinct function from their feelings of connectedness with their school communities, although they both are conceptualized as job resources. It is possible that attempts to connect with staff and administrators serve more as a professional resource, whereas school connectedness served as a psychological and emotional resource for teaching self-efficacy. This interpretation also helped explain how educators' increased attempts to connect with families mitigated the promotive influence of school connectedness on online teaching self-efficacy. As opposed to connecting with colleagues and administrators, teachers may experience connecting with families as a source of additional work and stress or a job demand in the JD-R model. Literature on parent–teacher communication suggests that teachers often find it difficult, stressful, and emotionally laborious to communicate with parents about their children's schooling (Leenders et al., 2019), which is consistent with our finding that attempts to connect with families functions as an energy-draining job demand for teachers.

Limitations and Future Directions

A number of limitations in the present study are important to note before considering its conclusions and practical implications. First, the sample size was relatively small compared to the district as a whole. The survey was distributed toward the end of the school year, which is a very busy time for teachers. Therefore, with a lack of incentive, and many job responsibilities competing for educators' time, it was difficult to encourage participation in the survey. A second limitation is that without control data from before distance learning began, it is impossible to determine how much teacher wellbeing has changed due to distance learning during the COVID-19 pandemic. Third, we cannot make causal inferences based on the study's correlational and cross-sectional research design. Further research should consider using a longitudinal and experimental design to assess causal relationships between school connectedness, attempts to connect with others, online teaching self-efficacy, and educators' compassion fatigue. Fourth, when the survey was administered in the late spring of 2020, educators in the participating district were very busy adjusting to distance learning. This fact could contribute to the relatively low response rate of the study (14%). The study's findings need to be interpreted with caution considering the relatively low response rate, and future studies with a more representative district sample and higher response rates are warranted. Nevertheless, the sample size provided adequate power to detect main and moderating effects and the findings were very timely and valuable for future follow-up studies using a larger educator sample. Fifth, our measure for attempts to connect with others is an exploratory measure that teachers might have interpreted as only successful attempts to connect with others, or both failed and successful attempts. Follow-up studies are needed to determine how teachers conceptualize their experiences with making attempts to connect with others, and if the impact of attempting to connect varies based on reciprocity in connection. Considering that only one item was used to assess each type of the "attempts to connect," it is also important to develop a more comprehensive multidimensional measure assessing educators' attempts to connect with different types of school members in future studies. Lastly, because this study stemmed from a research–practice partnership between a research institution and a local school district, the survey was created as a collaborative effort. This partnership is both a strength and a limitation because although the survey distribution was more seamless with the district's support, certain survey items had to be removed or altered in the interest of brevity and relevance for this particular population of educators.

Conclusion and Practical Implications

In this study, we found that the subjective perception of school connectedness functioned as a salient promotive factor and job resource for educators' occupational wellbeing, including reduced compassion fatigue and increased online teaching self-efficacy. We also found that educators' attempts to connect with different school members could function as either job demands or job resources on educators' compassion fatigue and online teaching self-efficacy, depending on who they are connected with. Based on the dual roles of "connect" on educators' professional wellbeing, we can make some tentative recommendations for school-based practices and initiatives for promoting healthy connectedness, online teaching self-efficacy, and reduce compassion fatigue among educators.

To promote the sense of school connectedness among school members while minimizing the risk of over-burdening educators in the distance learning and pandemic context, it is important for schools to support healthy boundaries and interactions (Case & Pate, 2020).

For example, schools could (a) provide various connection channels to meet the varying needs of different school members; (b) share communication norms for online meetings and interactions; (c) revise and/or create policies and procedures as needed; (d) provide two-way communication opportunities; (e) encourage the use of set working hours and scheduled breaks; and (f) use district and school media channels to share positive stories about the community.

To reduce educators' compassion fatigue, it is important for educators to learn how to recognize the signs of compassion fatigue and develop personalized self-care practices through professional development and mentoring support. It is also important for schools to conduct school-wide needs assessments to understand and monitor educators' top stressors, their exposure to secondary trauma risks, and provide sources for them to seek professional help when needed. Moreover, it is important for schools to develop initiatives and practices of collective compassion as a group. Research has shown that shared plight empowers individuals to heal as a group and reduces the risks of maladjustment (Brendgen et al., 2013).

To improve educators' online teaching self-efficacy, it is important to effectively address their basic needs for performing online teaching, especially their needs for technology support and safety. Moreover, it's important to provide professional development for educators to better understand students' learning motivation in the virtual environment. For example, research on the concept of flow, defined as a subjective state under which individuals are fully engaged with, and immersed in a task (Engeser, 2012), suggests five key elements for promoting students' flow in the virtual learning environment, which include (a) congruence between skills and challenges; (b) both skills and challenges surpass a certain level; (c) sense of controlling the virtual environment; (d) focused attention; (e) feeling of presence. It is important to consider those factors to improve educators' sense of teaching efficacy (Rodríguez-Ardura & Meseguer-Artola, 2017).

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