

Teacher Well-Being: Investigating Barriers and Facilitators Using the Job Demands-Resources Framework

by

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Dedication

To every teacher that was part of this research, every teacher I have had the privilege to work with, and every teacher that has taught me. This work is for you.

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Abstract

This dissertation investigates the resource needs, challenges, and strengths of teachers that influence teacher well-being in two studies. While many studies have focused on teacher stress and burnout, fewer studies utilize a strengths approach to explore teacher well-being. Teachers experience high stress and even burnout due to the demanding nature of their job; they face stressors on the interpersonal, organizational, and institutional levels. Despite these challenges, most teachers remain committed to the profession, yet there is a lack of studies that focus on how teachers thrive and the positive experience they have at school. In this dissertation, I use the Job-Demands Resources model as a theoretical framework. I use qualitative and quantitative methods across two studies to examine what resources teachers need to thrive and how these resources relate to teacher well-being and differ. In the first study, I explore teacher resource needs by analyzing data from a hashtag campaign that teachers responded to on Twitter. In the second study, I examine how resources relate to teacher well-being using a survey methodology. The findings offer a more in-depth understanding of teacher resource needs and well-being, which have practical implications for teacher training, professional development programs, and policies for effective ways to mitigate teacher attrition, stress, and burnout and promote teacher resilience and overall well-being. Additionally, theoretical implications may impact additions to the Job-Demands Resource theory and the study of teacher well-being.

Keywords: teacher well-being, resilience, strengths, positive psychology

Chapter 1 Introduction

This dissertation aims to explore teacher well-being by addressing the following overarching research questions: (1) What resources do teachers report they need to do their job? and (2) Which resources have the strongest relationships with positive and negative factors of teacher well-being? As leaders in educating the next generation, teachers' well-being is essential—not only for themselves but for society. Nevertheless, teaching is considered one of the most stressful occupations in the world (e.g., Montgomery & Rupp, 2005; Phillips et al., 2007), with many teachers experiencing high levels of stress and burnout at work. When rating their experience of stress at work, typically between a quarter to eighty percent of teachers rate their job as 'very' or 'extremely' stressful (e.g., Phillips et al., 2007). In a recent study of teachers in the United States, over 90% of teachers reported experiencing work stress (Herman et al., 2018).

Persistent teacher stress is a primary indicator of decreased teacher well-being and has been linked to adverse outcomes for both teachers and students, including decreases in physical and emotional well-being, engagement, and performance (Geving, 2007; Kokkinos, 2007). Increases in teacher stress are also associated with decreases in job satisfaction and commitment and increases in burnout and attrition (Betoret, 2009; Collie et al., 2012; Klassen et al., 2013; Skaalvik & Skaalvik, 2011) with subsequent negative impacts on physical and psychological health (McCarthy et al., 2014).

When teachers experience high levels of stress, the cascading adverse effects can impact students' achievement and performance (Herman et al., 2018; Ingersoll & Smith, 2003; Santiago, 2002). Additionally, research has documented that teacher well-being, both the positive (e.g., work engagement) and negative (e.g., work stress) factors, impact a teacher's ability to form strong relationships with students, and this has negative consequences on student academic achievement and behavioral outcomes (Jennings & Greenberg, 2009; Wentzel, 2010). Furthermore, individual teacher characteristics are more influential on differences in student progress than school characteristics (Sammons et al., 2007). Understanding the effects of teacher stress and burnout and putting teachers' well-being first can improve the working lives of teachers and positively impact student achievement and success.

Past research has primarily focused on the causes and consequences of teacher stress and burnout (Kyriacou, 2001) and teacher attrition (Day, 2008; Ingersoll & Smith, 2001, 2003). Many studies show that the number of teachers exiting the profession has increased steadily over time (Carroll & Foster, 2010). Results from the 2017-18 school year show that every state in the United States had teacher shortages, and an estimated 50% of teachers were looking to leave the profession (Glande et al., 2018). Additionally, it is estimated that during the first five years of teaching, 77% of teachers left their school, and 45% left the district (National Center for Educational Statistics, 2019). For the education system at large, a high attrition rate among teachers has been one of the major concerns for policymakers because of the economic and institutional costs (Darling-Hammond et al., 2017; Kersaint, 2005). This turnover also adversely affects student success (Macdonald, 1999; Ronfeldt et al., 2013). Therefore, retaining teachers and decreasing their work stress is a noteworthy concern in many countries (Scheopner, 2010).

Although studies that examine burnout, stress, and attrition help our understanding of the problems related to teacher well-being, they do not sufficiently capture the breadth of the issue. Despite the number of teachers exiting the profession, the teachers who remain committed to the profession and the positive experience of teachers (with and without stress) are discussed and studied less often. An alternative approach to understanding teacher attrition involves examining teachers' experiences who do not leave the profession and remain committed and engaged (Day & Gu, 2009; Gu & Day, 2007; Howard & Johnson, 2004).

Researchers posit that positive indicators of teacher well-being are distinctive from negative indicators (van Horn et al., 2004; Taris et al., 2004). For example, just because a teacher is not stressed or burned out does not mean they are doing well at work; decreases in stress and burnout are only part of the story. Therefore, positive indicators of teacher well-being are essential in progressing the science of improving teachers' work experience. Teacher well-being research should focus on both the factors that support teachers and the resources that help teachers navigate challenges in the workplace (Beltman et al., 2011). A balanced and comprehensive approach to studying teacher well-being should include understanding the negative factors of teacher well-being (such as stress and burnout) as well as the positive factors (such as job satisfaction and engagement). Shifting our focus from the pathology understanding of teacher well-being that focuses on teacher stress and burnout to a more balanced and comprehensive approach may provide different solutions and more effective interventions to address the attrition crisis (Sumsion, 2003). In other words, to complement and extend the stress and burnout research, an agenda that includes both components of teacher well-being is essential for teacher retention (Scheopner, 2010).

Newer theories have been adopted to include both positive and negative factors of employee well-being. The Job-Demands Resources (JD-R) model of employee well-being is an example of one of these theories that have been applied to teachers (Bakker & Demerouti, 2007; Demerouti & Bakker, 2011; Schaufeli & Bakker, 2004). This model is a theoretical framework that integrates two research traditions: stress and motivation. According to the JD-R theory, burnout and work engagement result from the interactions of both job demands and available resources (Bakker & Demerouti, 2007; Demerouti & Bakker, 2011), as well as how demands and resources interact and predict key organizational and well-being outcomes (Demerouti & Bakker, 2011). According to this theory, job demands are the antecedents of the health impairment and burnout process, while job resources are the antecedents of the motivational and engagement process (Demerouti & Bakker, 2011). Importantly, job demands and resources also have an interactive effect on employee well-being. For example, demands may increase stress, but this stress is also a consequence of these demands in combination with a lack of resources. Importantly, work well-being requires the presence of demands but also the presence of the corresponding resources. Overall, this theory is interested in the stressors that employees face and the resources that allow them to buffer these stressors. Investigating teacher resource needs and job demands has important implications for understanding teacher well-being.

While research has confirmed this model with the teaching profession, further research is still needed. First, the JD-R model can be extended to include other positive and negative factors of workplace well-being. The framework of this dissertation adds to the JD-R model to suggest that resources and demands also interact with job stress and job satisfaction (see Figure 1.1 for the current framework). Next, there is a need for more research that identifies specific job resource needs for teachers and explores the relationship between these resources and well-being

outcomes (Skaalvik & Skaalvik, 2018). Resource needs may change for teachers over time as the profession and education policy change. Thus, it is essential to continually study contributing factors of teacher well-being over time (Kyriacou, 2001). Though job demands change over time as well, job resources may be particularly essential in researching teacher well-being as they can enhance positive factors of well-being and buffer against negative factors even in the presence of job demands. This dissertation aims to explore these topics that still require further research and expand upon the JD-R model and research on teacher well-being by addressing the following overarching research questions: (1) What resources do teachers report they need to do their job?, and (2) Which resources have the strongest relations with positive and negative factors teacher well-being?

By understanding the resource needs most important to teacher well-being and how teachers utilize these resources, I hope to identify which tools and resources are most important in helping teachers remain well and committed to their work. The current research has the potential to suggest implications for pre-service teacher programs, school administrations, educational policy, and professional development agendas to reduce teacher stress, burnout, and attrition and promote teacher well-being. Additionally, answering these research questions will add to the JD-R model of employee well-being by identifying essential resources for teachers, establishing connections between resources and well-being outcomes, and investigating the process of how resources relate to teacher well-being.

Consequences of Teacher Well-Being

First, it is important to outline the various consequences that teacher well-being has for both teachers and students to establish the importance of understanding and studying teacher well-being. There are several negative consequences of negative factors of teacher well-being

(operationalized in the current study as *job stress* and *burnout*) and positive consequences of positive factors of well-being (operationalized in the current study as *work engagement* and *job satisfaction*).

Negative Consequences

Stress and burnout have several well-documented negative consequences on teachers' well-being. For example, increases in teacher work stress are associated with lower job satisfaction, decreases in job performance, lower levels of commitment, an increased number of total days absent, and increases in teacher attrition (Betoret, 2009; Borg & Riding, 1991; Collie et al., 2012; Klassen et al., 2013; Klassen & Chiu, 2011; McCarthy et al., 2014; Skaalvik & Skaalvik, 2011, 2015). Thus, teachers who experience high levels of stress are less likely to be satisfied with their job and are more likely to leave the profession.

Burnout is also associated with a range of negative physical symptoms, increases in teacher absences, and increases in teacher attrition (Carson et al., 2010; Grayson & Alvarez, 2008; Skaalvik & Skaalvik, 2007). Physical symptoms associated with burnout include headaches, fatigue, sleep problems, hypertension, cardiovascular disorders, and loss of appetite (Freudenberger, 1980; Leung et al., 2000; Melamed et al., 2006; Pines, 1993; Sakharov & Farber, 1983). Psychological consequences may include restlessness, irritability, and feelings of isolation (Burke & Greenglass, 1993). Finally, behavior consequences that are frequently cited include hyperactivity, sluggishness, annoyance, mistrust, and even problems with close relationships (Chan, 1998). Importantly, there is also evidence to suggest that teachers' experience of burnout affects not only both their physical and psychological well-being but also the well-being of their colleagues (Bakker & Schaufeli, 2000).

One of the major concerns about the consequences of a lack of teacher well-being is the association with higher teacher turnover (e.g., Borg & Riding, 1991; McCarthy et al., 2014). In a study of 185 elementary teachers, McCarthy et al. (2014) examined teacher stress, job satisfaction, and coping resources. They found that teachers with lower job satisfaction, lower personal coping resources, and more stress were more likely to indicate an intention to leave the teaching profession. In another study, Borg and Riding (1991) investigated the teacher stress, job satisfaction, and career commitment of 545 secondary teachers. They found that teachers who reported greater stress were less satisfied with teaching, more likely to be absent, and more likely to indicate an intention to leave the teaching profession. Additionally, they found that teachers who reported greater stress were also less likely to return to the teaching profession again. In sum, there is a range of negative consequences that teachers experience based on negative factors of well-being, such as teacher stress and burnout. These consequences have severe implications for the health of teachers and the rate at which they are leaving the profession.

Teacher stress unavoidably affects students. Teacher stress predicts poor teacher-student relationships and is positively correlated with student misbehavior (Yoon, 2002; Geving, 2007). Teacher burnout is also associated with the negative effects of teacher-student relationships and classroom climate (Jennings & Greenberg, 2009). Additionally, studies show that teacher stress and burnout have negative consequences on student academic achievement (Ingersoll & Smith, 2003; Santiago, 2002; Wentzel, 2010).

Experiencing stress and burnout affects a teacher's affect and emotions, and negative emotions and negative affect can have consequences for students (McLean & McDonald, 2015). Becker et al. (2014) investigated the relationship between teacher emotion and student emotion by having students rate instructional behavior and teacher emotion as well as their own emotions.

Results suggest that teachers' emotions are as crucial for student emotions as teachers' instructional behavior. Students experience an emotional crossover such that teacher anxiety and anger were positively related to student experiences of anxiety and anger. Furthermore, teachers' negative affect may have effects on students. Hamre and Pianta (2001) found that kindergarten teachers' reports of negative affect (concerning how they felt about their students) were positive predictors of student social and academic outcomes through fourth grade. Thus, teachers' display of negative affect towards students negatively impacted them socially and academically, and this effect was displayed long-term.

Positive Consequences

Positive factors of teacher well-being have significant and positive consequences for teachers. For example, higher levels of work engagement were associated with increases in subjective happiness (e.g., De Stasio et al., 2019). The research found that teachers who engaged in their work were happier and were more likely to use coping strategies and proactive strategies at work. Importantly happiness has many significant consequences. Benevene et al. (2019) found that happiness was related to increases in self-esteem and teacher health.

Job satisfaction also has several positive consequences. Teacher satisfaction is positively related to positive relationships with colleagues, positive relationships with parents, and a sense of belonging at school (Skallvik & Skaalvik, 2011). Satisfied teachers are more enthusiastic, have greater psychological health, and display better teaching quality (Hongying, 2007; Vieira & Jesus, 2007). Job satisfaction is also positively related to teacher self-efficacy (Viel-Ruma et al., 2010), and self-efficacy plays a role in protecting against work stress among teachers and has been linked to decreases in teacher work stress (Schwartzter & Hallum, 2008; Vaezi & Fallah, 2011). Lastly, teacher satisfaction is a key predictor of professional motivation, which has a

range of consequences for schools and students (Buyukgoze-Kavas et al., 2014; Sesen & Basim, 2012; Simbula & Guglielmi, 2013; Vieira & Jesus, 2007).

Positive factors of teacher well-being have also been linked to positive student outcomes. Teacher well-being has consequences for student academic achievement and motivation (e.g., Bricheno et al., 2009; Day, 2008; Vieira & Jesus, 2007). Research shows that teacher job satisfaction affects their attitudes, motivation, and affect, and these levels are transmitted to students (Roth et al., 2007). Satisfied teachers are more motivated, which may facilitate the achievement of schools' objectives and motivate their own students (Vieira & Jesus, 2007). Additionally, this satisfaction and motivation may affect teacher emotion, and teacher emotion plays a role in the emotions that students experience. Becker et al. (2014) found that positive teacher emotion was associated with positive student emotion. Results from this study showed that teacher joy was positively related to students' experience of joy. Similarly, Bakker (2005) found that this type of emotional crossover existed with the experience of flow and happiness, such that teachers' experiences of flow and happiness were positively associated with students' experience of flow and happiness in the classroom.

Other studies note the importance of positive teacher well-being factors concerning academic performance in schools (e.g., Briner & Dewberry, 2007; Day, 2008). For example, Day (2008) found that students of teachers who are committed are likely to make more academic gains than students whose teachers are not as committed. Briner and Dewberry (2007) found that increases in teacher job stimulation and enjoyment were related to increases in student performance and increases in SAT scores. In another study, Duckworth et al. (2009) investigated teacher effectiveness. They measured three positive traits (optimistic explanatory style, grit, and life satisfaction) of teachers placed in under-resourced schools and assessed these measures with

their student's academic performance, determined by the end-of-year achievement. They found that all three of these measures were predictive of positive gains in student academic achievement. Research shows that positive factors of teacher well-being are significant in considering student academic achievement, and scholars have called for the expansion of this research due to the consistent links between teacher well-being and student achievement (Bricheno et al., 2009).

Theoretical Framework: The Job Demands-Resources Theory

This dissertation uses the Job Demands-Resource (JD-R) theory as the guiding theoretical framework for investigating teacher well-being. The JD-R theory is an example of a well-being model that predicts workplace well-being in terms of both negative and positive factors and has already been applied to samples of teachers to examine teacher well-being.

The JD-R theory was developed to model and predict employee well-being, including both burnout and engagement at work (Bakker & Demerouti, 2007; Bakker et al., 2007, 2011; Demerouti et al., 2000). This theory defines burnout according to the conceptualization of exhaustion, cynicism, and lack of professional efficacy (Schaufeli & Bakker, 2004; Maslach et al., 1996). This theory defines engagement as the opposite, but independent, of burnout—including the experience of energy, involvement, and efficacy at work (Schaufeli & Bakker, 2004). The model has also been used to predict organizational commitment, work enjoyment (e.g., Bakker et al., 2010), and connectedness at work (e.g., Lewig et al., 2007). Also, the JD-R model has been used to predict consequences, including sickness, employee absenteeism (e.g., Bakker et al., 2003; Clausen et al., 2012; Schaufeli et al., 2009), and job performance (e.g., Bakker et al., 2007). This model is widely cited in occupational well-being literature (Dicke et al., 2014), and by using this theory, researchers can understand, explain, and make predictions

about employee well-being (e.g., burnout, motivation, work engagement) and job performance (Bakker & Demerouti, 2014).

Overall, the JD-R theory claims that two factors predict these outcomes: *job demands* and *job resources*. Job demands and resources initiate different processes, but they also have combined effects. Ideally, access to job resources positively affects work engagement, which increases organizational commitment and performance at work. Conversely, high job demands and low resources can result in burnout and a decrease in job engagement (Demerouti et al., 2001).

According to Demerouti and Bakker (2011), job demands are physical, psychological, social, or organizational aspects of work that require physical or psychological efforts that can be associated with physical or psychological costs, such as workload or conflicts at work. Although job demands are not necessarily harmful, they become stressors when certain physical and psychological costs lead to depression, anxiety, or burnout, and there are no resources to recover from these stressors (Schaufeli & Bakker, 2004). In other words, job demands refer to the aspects of the job that require cognitive or emotional effort. Job demands for teachers may include managing student behavior or the amount of grading they must complete outside of school. Importantly, this theory posits that the presence of job demands is necessary to an employee's well-being—such that having job demands in the workplace, when accompanied by the necessary resources to support, have a positive effect on workplace well-being.

Job resources, on the other hand, refer to the physical, psychological, social, or organizational factors of work that are functional in achieving goals at work, reducing job demands (and associated physical and psychological costs), and stimulating personal engagement at work, such as supportive colleagues or performance feedback (Demerouti &

Bakker, 2011; Demerouti & Bakker, 2014; Schaufeli & Bakker, 2004). Specific resources correspond to specific job demands. Thus, job resources are not only associated with work engagement but also work to help buffer and alleviate negative consequences from job demands. Job resources for teachers may include support from the administration, professional development, and a positive school climate.

A proposed addition to the original components of the JD-R model is personal resources. Personal resources are defined as positive self-evaluations (Bakker & Demerouti, 2014). Increases in job resources positively affect personal resources, which in turn positively affect outcomes such as work engagement. These personal resources may increase an individual's sense of their ability to have an impact at work. Conversely, poor self-evaluations (decreases in personal resources) can diminish the positive effects that job resources have on work engagement (Bakker & Demerouti, 2014).

This theoretical model suggests that every job is subject to unique demands and resources that can change over time and that these factors can be investigated in a range of work environments and tailored to specific occupations (Bakker & Demerouti, 2014). There has been specific research on how the JD-R model applies to teachers, and this model has been verified with teacher populations by multiple research teams to predict burnout and work engagement among teachers (e.g., Dicke et al., 2017; Evers et al., 2016; Hakanen et al., 2006; Prieto-Ursúa et al., 2008).

Hakanen et al. (2006) investigated these two parallel processes of the JD-R model among 2,038 teachers. They sought to confirm the job demands process (that high job demands lead to job burnout and ill-health) and the job resources process (that increases in job resources lead to work engagement and organizational commitment). The results confirmed their hypotheses, such

that access to job resources positively affected work engagement, which increased teacher organizational commitment to teaching. Additionally, high job demands increase job burnout and ill health. This study confirmed that, on the one hand, teachers are exposed to factors of the job that cause stress and fatigue, and on the other hand, there are resources available to teachers that they can utilize to buffer these stressors and increase their engagement in the workplace. The confirmation of this model also suggests that high job demands and low job resources would result in burnout and decreased job engagement for teachers, while high job resources would mitigate this burnout and increase job engagement.

Similar findings were reported by Bakker et al. (2007). In their study among teachers working in elementary, secondary, and vocational schools, they found that job resources acted as buffers and diminished the negative relationship between student misbehavior and teacher work engagement. They also found that job resources especially influenced work engagement when teachers were confronted with high levels of student misconduct. Thus, job resources were not only able to buffer job demands, but the presence of job demands in conjunction with job resources enhanced work engagement. This agrees with the JD-R theory that job demands can create meaningful challenges and, in the presence of job resources, can positively impact workplace well-being.

Research has documented specific job demands and resources in the teaching profession. Job demands such as managing student behaviors and student misconduct, low student motivation, large class size, insufficient salary, heavy workload, conflict with colleagues, role ambiguity, and lack of social support have been recognized as contributors to teacher stress and burnout (Bakker et al., 2007; Betoret & Artiga, 2010; Bitsadze & Japaridze, 2014; Castro et al., 2010; Coates & Thoresen, 1976; Chang, 2009; Collie et al., 2012; Fernet et al. 2012, 2013;

Friedman, 1995; Hakanen et al., 2006; Ju et al., 2015; Kokkinos, 2007; Macdonald, 1999; Nagy & Takács, 2017; Shernoff et al., 2011). Though much of the research on teacher well-being has focused on identifying job demands, research on job satisfaction and work engagement have also identified some potential job resources. These resources include experiencing autonomy at work, opportunities for professional development, teacher training, colleague support, supervisor support, a positive social support climate at school, perceived fairness of administration, and collective school culture (Collie & Martin, 2017; Hakanen et al., 2005; Prieto-Ursúa et al., 2008; Simbula et al., 2012; Skaalvik & Skaalvik, 2011). Specific job demands and resources in the teacher well-being literature are further outlined below.

Contributing Factors of Teacher Well-Being

A large portion of the research on teacher well-being examines negative factors of functioning, such as burnout and stress (Fleming et al., 2013), which fails to account for the positive factors of teacher well-being and positive experiences at school. Fully understanding teacher well-being requires the focus on both positive and negative factors of well-being that facilitates teachers to do their best and to experience meaning and joy at work. The current dissertation examines positive teacher well-being in terms of job satisfaction and engagement and negative teacher well-being in terms of stress and burnout. The contributors to teacher well-being are further discussed below.

Barriers to Teacher Well-Being: Demands

Barriers to teacher well-being have been heavily researched. Teacher work stress is commonly defined as the experience of unpleasant negative emotions due to work-related factors and stressors (Kyriacou, 2001), and stressors are defined as the stimuli that evoke such stress (Kyriacou, 2001). When these stressors continue over time, and teachers lack coping strategies,

there is a range of potential negative consequences. Burnout is another commonly discussed indicator of negative teacher well-being. Burnout is defined as the experience of emotional exhaustion, depersonalization, and lack of self-efficacy (Maslach et al., 1996). Professional burnout is a term used to categorize the accumulated stress response that a person experiences due to stressors caused by their job (Maslach et al., 2001).

Teachers face challenges and stressors in the workplace that contribute to these exacerbated stress and burnout levels, which often lead to increases in attrition. Per the JD-R model, these stressors are defined as demands and have negative consequences for teacher well-being (Bakker & Demerouti 2007; Demerouti & Bakker 2011; Schaufeli & Bakker 2004). The JD-R model categorizes these stressors as psychological, social, organizational, and physical demands (Demerouti & Bakker, 2011). Common demands documented in the teacher well-being literature are addressed below.

Psychological Demands. Several psychological demands can contribute to negative consequences for teacher stress and burnout. Negative self-beliefs, lack of confidence, lack of available coping strategies, and difficulty asking for help are some of the most discussed stressors that negatively affect teacher well-being. Negative self-beliefs or self-perceptions have been recognized as a factor that contributes to decreases in self-efficacy and increases in stress and burnout (Day, 2008; Prasojo et al., 2020). Teachers may develop negative beliefs about themselves as a teacher, and this can decrease their self-efficacy for doing their job, which in turn increases their stress and burnout.

Another identified psychological demand is poor individual help-seeking behaviors. Fantilli and McDougall (2009) found that the teachers who were struggling had poor help-seeking behaviors. They found that even in the presence of supportive administration or

colleagues, the degree to which teachers seek support may play a role in their work stress. Thus, help-seeking may be an individual behavior that, if not learned, can negatively affect teacher work stress.

Poor coping strategies also play an important role in teacher work stress (e.g., Dworkin et al., 1990; Worrall & May, 1989). Even in the presence of stress, how teachers view and experience stress may differ based on how they view and cope with the stressor. For example, one teacher may view an event as extremely stressful, while another teacher may view the same event as a challenge if they are equipped with proper coping strategies (Dworkin et al., 1990). Therefore, teachers with poor coping strategies could experience increases in stress in the presence of challenges and stressful events.

A teacher's perception of how their personal beliefs align with the practices they are mandated to use may also be a personal demand (Flores, 2006). For example, teachers are often told what to do in their classrooms, and if a teacher's personal pedagogical beliefs conflict with these mandated practices, the experience of tension can arise. Similar to coping strategies, this risk factor may change based on perception, such that one teacher may view a difference in belief as a conflict, and another may view it as a challenge.

Lastly, there is research to suggest that personality factors may play a role in stress and burnout (e.g., Kokkinos, 2007; Travers & Cooper, 1993; Wilson et al., 1990). Kokkinos (2007) found that certain personality characteristics were associated with increases in stress and burnout—including high levels of neuroticism and low levels of agreeableness. Moreover, having an external locus of control has been identified as an important predictor of the experience of psychological distress in teachers (e.g., Travers & Cooper, 1993; Wilson et al., 1990).

Social Demands. While many demands are conceptualized as added stimuli that increase stress, the decrease of a resource may also be considered a demand (Demerouti & Bakker, 2011). In the case of social demands, the principal factor associated with increases in stress and burnout is social support. Indeed, many theorists argue that lacking social support in the workplace can contribute to the development of burnout (Hobfoll, 1989; Hobfoll & Freedy, 1993; Hobfoll & Shirom, 2000).

Workplace social support has been consistently negatively associated with teacher burnout (e.g., Ju et al., 2015; Russell et al., 1987). Moreover, many studies highlight the importance of having a range of social support networks (e.g., Hobfoll, 1989; Hobfoll & Freedy, 1993; Uludag & Yaratan, 2013). These social support sources include not only administration and colleague support but also support from the community, family, and friends.

Organizational Demands. Organizational demands are well-documented in the literature on teacher stress and burnout. The most mentioned demands include stress from classroom management, workload, and time pressures (Aldrup et al., 2017; Boyle et al., 1995; Chaplain, 2008; Klassen & Chiu, 2010; Sandilos et al., 2018).

Classroom management is consistently discussed as a demand for teachers. Managing student behaviors while delivering instruction is difficult. Thus, teachers must not only have the skills to deliver instruction but also have the skills to manage a range of student needs and behaviors (Castro et al., 2010; Harrison et al., 2012; Hasting & Bham, 2003; Howard & Johnson, 2004; Kitching et al., 2009). In addition, large class sizes, insufficient salaries, lack of career opportunities, and higher standards for student performance in schools also play a significant role in teacher stress (Macdonald, 1999; Spear et al., 2000; Spencer et al., 2012). These demands, coupled with increases in accountability, contribute to the heavy workload on teachers (Castro et

al., 2010; Fleming et al., 2013; Greenglass & Burke, 2003; Lambert et al., 2009). Specifically, researchers have discussed how the increasing measures of teacher evaluation play a part in this accountability and add to teacher stress (e.g., Kyriacou, 2001; Montgomery & Rupp, 2005).

Physical Demands. Like social stressors, physical stressors can often be thought of in terms of a lack of a resource—in this case, physical resources. For example, materials and resources are important for teachers to complete their work, but a lack of these materials and resources can create demands. Similarly, the physical conditions of schools are an example of another physical demand. While well-equipped and updated school buildings may be a resource, poor physical school conditions may act as a demand.

Indeed, poor school conditions and lack of physical materials have been shown to have a negative relationship with teacher well-being. For example, poor facilities and a lack of material resources have been identified as factors teachers consider when leaving the profession or moving schools (Rivkin et al., 2005; Wynn et al., 2007). Unfortunately, many physical resources depend on school districts and locations. School location often determines the level of school funding. Thus, school location can play a role in the stress and burnout of teachers, such that teachers working in high-poverty and under-resourced schools experience additional stress. High-poverty schools are disproportionately linked to related factors such as lack of resources and physical school building problems (Aldrup et al., 2017), and teachers who work at these schools experience greater stress and burnout than teachers their counterparts (e.g., Atkins et al., 2003; Boyd & Shouse, 1997; Capella et al., 2008). A lack of these physical resources, like materials teachers need to do their job, can contribute to increases in stress and burnout.

Facilitators of Teacher Well-Being: Resources

Fewer studies approach the topic of teacher well-being by investigating the healthy functioning of teachers at work. However, despite the high levels of stress teachers experience, many still find engagement and satisfaction in working with students and remain in the profession (Briner & Dewberry, 2007; McCallum & Price, 2010).

Two positive factors of workplace well-being include work engagement and job satisfaction. Work engagement refers to the voluntary involvement and activity with a range of tasks required by a particular job role (Christian et al., 2011). Bakker et al. (2011) posit that there are two core conceptual dimensions—energy and involvement—that underpin work engagement. Job satisfaction is the feeling of contentment and happiness at work and completing work-related goals and activities (Swaminathan & Jawahar, 2013). More specifically, a teacher's job satisfaction can be defined as their positive emotional reaction to their job as a teacher (Skaalvik & Skaalvik, 2011). Examining teacher work engagement and job satisfaction is essential to understanding the experiences of teacher well-being.

Although research on these positive factors, such as job satisfaction and engagement, is not as rich as the literature on the negative impacts on well-being, researchers have more recently investigated positive factors of teacher well-being (e.g., van Horn et al., 2004). One such area of interest is examining the factors that contribute to these positive outcomes. The JD-R model categorizes these positive contributors as resources that can increase positive factors of workplace well-being and buffer against stressors or demands to decrease negative factors of workplace well-being (Bakker & Demerouti 2007; Demerouti & Bakker 2011; Schaufeli & Bakker 2004). These resources can be further categorized into psychological, social, organizational, and physical resources (Demerouti & Bakker, 2011). Common resources documented in the teacher well-being literature are addressed below.

Psychological Resources. Several psychological factors that promote teacher well-being have been identified, including positive self-efficacy beliefs, experiencing agency, having optimism, maintaining work-life balance, having a strong sense of purpose, engaging in self-care, and setting emotional boundaries between life and work (Chiou, 2016; Cameron & Lovett, 2014; Gu & Day, 2007; Johnson et al., 2014; Tait, 2008).

Self-efficacy beliefs appear to play an essential role in positive factors of teacher well-being (e.g., Day, 2008; Gu & Day, 2007; Hong, 2010; Klassen & Chiu, 2011). Teacher self-efficacy can be defined as a teacher's belief in their abilities to do their job (Tschannen-Moran & Hoy, 2001). Researchers have demonstrated the importance of teacher self-efficacy and suggest that having strong efficacy beliefs positively affects a teacher's confidence to do their job and in turn, a range of other work-related and school-level outcomes (Tschannen-Moran et al., 1998; Tschannen-Moran & Hoy, 2001). Hong (2010) found that teachers who remain in the teaching profession are more likely to hold strong self-efficacy beliefs in the face of challenges and can set emotional boundaries between themselves and students. Self-efficacy also plays a role in work engagement and job satisfaction. Xanthopoulou et al. (2007) found that self-efficacy positively predicts work engagement, while Zee and Koomen (2016) found that in 165 studies, teacher self-efficacy consistently showed positive associations with job satisfaction.

Optimism is another psychological resource that may buffer against stress and increase well-being. Optimism is generally defined as the expectation that good things will occur in one's life (Scheier & Carver, 1992), and optimism is considered a contributor to physical and psychological well-being (Scheier & Carver, 2003). In a study of high school teachers, optimism was positively related to self-efficacy and negatively related to both stress and health problems, such that teachers who had greater optimism experienced less stress and fewer health problems

(Chiou, 2016). In another study measuring optimism and its' consequences for stress, Gliebe (2013) found that optimism was a significant predictor of decreases in perceived stress even when accounting for rumination and positive reappraisals. The effects of stress on teachers can be reduced by optimism (Otero Lopez et al., 2010). Indeed, optimistic teachers are more likely to see challenges as obstacles that can be overcome, and this might explain why stress can be reduced through optimism (Duckworth et al., 2009). Increases in optimism in teachers have also been associated with increases in self-esteem, higher levels of teaching effectiveness, positive attitudes toward students, and job satisfaction (Duckworth et al., 2009; Ahmed, 2012).

The experience of autonomy in the workplace seems to be another key factor for teacher well-being. Teacher autonomy is commonly defined as the freedom for teachers to make decisions about aspects of their job (Pearson & Moomaw, 2006), such as deciding on lesson plans or making decisions about managing students. For example, Cameron and Lovett (2014) conducted a study to examine teacher satisfaction over time. They concluded that teachers who were satisfied with their job were the ones who regularly experienced agency in their work and thus could make important decisions in their classroom when needed. Several other studies confirm that increases in autonomy are associated with increases in both job satisfaction and engagement for teachers (Avanzi et al., 2013; Pearson & Moomaw, 2005; Skaalvik & Skaalvik, 2009, 2010, 2014).

Social Resources. Many social resources have been mentioned in the teacher well-being literature as positive contributors to teacher well-being. Supportive leadership, mentors, and relationships with various members of the school community have all been frequently discussed as significant social resources in terms of job satisfaction and engagement (e.g., Anderson & Olsen, 2007; Goddard & Foster, 2001; Kun & Gadanez, 2019; Yost, 2006.)

Administrative support, relationships, and leadership style are apparent contributors to positive factors of teacher well-being (Cansoy, 2019; Hongying, 2007; Yost, 2006; Wagner & French, 2010). Olsen and Anderson (2007) found that teachers are more likely to continue in their profession if they perceive that they have administrative support that continues throughout their careers. Goddard and Foster (2001) suggest that an essential part of the early career process involves receiving guidance and support from the school administration, especially in the form of instructional leadership and classroom management. For example, demonstrating respect for teachers' professional judgments and feeling respected and cared for in the workplace is also shown to enhance teacher well-being (Le Cornu, 2013; McCallum & Price, 2010).

Beyond relationships with administrators, other relationships within the school community are also a significant contributing factor to teacher well-being, such as relationships with colleagues and students. Colleague support is a primary source of social support for teachers (Hongying, 2007; Howard & Johnson, 2004; Papatrainou & Le Cornu, 2014; van Horn et al., 2004). Colleague support can even be more helpful than administrative support, as it may be perceived as less judgmental (Papatrainou & Le Cornu, 2014). This research challenges traditional programs to consider ways in which peers can become mentors to increase the positive experiences of teachers. Researchers have found that teachers frequently mention the need to have time to build relationships with other teachers and collaborate with like-minded peers (Anderson & Olsen, 2006). Studies also show that building relationships with students contributes to increases in teacher well-being (e.g., Griffin, 2010; Kun & Gadanez, 2019; Karavas, 2010; van Horn et al., 2004). Thus, a variety of relationships and interactions in schools with administrators, colleagues, and students positively contribute to teacher well-being.

Organizational Resources. Organizational factors, such as leadership and school culture, play a role in positive teacher outcomes. Beyond the presence of leadership or administration support (as discussed previously), the *type* of leadership style that administrators assume is also important in considering teacher job satisfaction. In a systematic review of leadership style and job satisfaction, Cansoy (2018) found that the most identified type of leadership style associated with job satisfaction was transformation leadership (e.g., Haj & Jubran, 2016; Kadi, 2015). Transformational leaders are defined as administrators who encourage the interest of individuals in the group by forming common visions and goals of the organization (in this case, schools) and can motivate the group members (Bass, 1990). Thus, not only support from the administration, but the style of how administrators lead teachers contributes to their experience of well-being.

Next, school culture is associated with teacher job satisfaction. A strong school culture, often defined as the values and norms within a school system (Hoy, 1990; Heck & Marcoulides, 1996), has consistently been associated with increases in teacher job satisfaction (Cheng, 1993; Gligorović et al., 2016; Xiaofu & Qiwen, 2008). Cheng (1993) found that in a stronger school culture with shared participation, strong leadership, and intimacy, teachers experience higher job satisfaction and increases in their productivity. One suggested explanation for why a strong school culture may increase teacher well-being is that this type of culture can help teachers to find solutions to overcome the obstacles and challenges they encounter in schools more easily (Hancock & Scherff, 2010).

Physical Resources. Just as a lack of material resources and poor physical structures can have negative consequences for teacher well-being, the presence of these materials and structure can contribute to positive factors of well-being. School context is relevant when considering

teacher job satisfaction. As stated earlier, teachers in urban schools often are burdened by large class sizes and a lack of resources when compared to their suburban counterparts. Research shows that while these teachers have increased stress, they also experience higher rates of job dissatisfaction as compared to their suburban counterparts (e.g., Langley et al., 2010; Shernoff et al., 2011). Thus, there is evidence to suggest that teachers who have access to more material resources, supplies, and facilities may have higher job satisfaction when compared to urban teachers.

While access to school supplies and materials might seem like a necessity, studies have investigated whether having access to these materials affects job satisfaction. In one study, science teachers' perception of the laboratory and learning environment space was predictive of their job satisfaction (Che Ahmad et al., 2013). This provides evidence that the physical surroundings impact their job satisfaction. In another study, Korb and Akintunde (2013) found that instructional materials were also related to job satisfaction. Access to these materials and resources undoubtedly effect a teacher's ability to do their job and their well-being.

Demographic Differences in Teacher Well-Being and Resources

Understanding differences in teacher well-being and resources across demographic characteristics (e.g., years of experience, school location, school type) can help inform *where are* and *who are* the teachers that need the most support, but also the same information regarding the teachers who are engaged and satisfied with their work. These differences could have policy implications for where support is needed most. These differences could also help reveal what certain types of schools or certain groups of teachers are doing to promote their well-being for others to examine as exemplars. Even though scholars have pointed to personal characteristics of teacher well-being as an important field of study (Kyriacou, 1987), there

have been few studies that investigate these personal characteristics (Lau et al., 2005). Below, preliminary findings on demographic differences in terms of well-being and resources are outlined.

Socioeconomic Status of Students and School Location

While teacher turnover is a worldwide concern, certain schools suffer from teacher turnover at exacerbated rates. Teacher turnover is more substantial in historically underserved and marginalized schools (Marinell & Coca, 2013; Ronfeldt et al., 2013). Many schools that serve low-income children lose over half of their teaching staff every five years (Allensworth et al., 2009). While some teachers leave the profession altogether, others move to schools with more resources. Simon and Johnson (2015) reviewed evidence from six studies collectively to understand why many teachers moved from working in schools that serve low-income students (most typically urban schools) to schools that serve wealthier populations of students (most typically suburban schools). They found that the reasons for teachers leaving were due to poor working conditions. Moreover, they found that what teachers sought most were factors relating to school leadership, relationships with their colleagues, and school culture. In terms of other resources, research shows that teachers with the lowest percentage of students who received free and reduced lunch (a marker of the socioeconomic status of students) are paid the most (Goldring et al., 2013).

Teachers who work in urban schools are at higher risk of experiencing work-related stress (Bottiani, 2019). Teachers in urban schools deal with challenging work conditions, limited resources, and the burden of policies that emphasize test scores (Boyd & Shouse, 1997; Smylie, 1999). Thus, teachers in these areas often suffer from greater stress when compared to their Suburban counterparts (Yonezawa et al., 2011). Fewer studies have investigated differences in

teacher well-being among rural teachers. However, one study found that there are differences in what these teachers found stressful—for example, rural teachers perceived too much parental contact as a stressor, while urban teachers perceived a lack of perceived parental involvement as stressful (Abel & Stewart, 1999). Further, this research found that urban teachers attributed more stress to student discipline, while rural teachers attributed more stress to the time demands and conditions of their work. Lastly, it was found that rural teachers had less access to computer use in class than their suburban and urban counterparts (Goldring et al., 2013).

Type of School

Schools in the United States are generally categorized as private, public, or charter. In terms of well-being, it has been reported that charter school teachers are more satisfied than public school teachers—presumably because of their greater autonomy (Renzulli et al., 2001). However, teacher turnover is much higher in charter schools compared to public schools (Renzulli et al., 2011; Stuit & Smith, 2012). Stuit and Smith (2012) found the reported reasons for charter school teachers leaving were due to working conditions and the lower rate of union memberships, though in their study, they did not find measurable evidence for a difference in working conditions (working hours per week and availability of materials). Renzulli et al. (2011) also found that reported material resources did not differ amongst these groups. Moreover, Stuit and Smith (2012) found that coworker support did not differ between the two groups, but that charter school teachers had more autonomy and higher pay. In a study that examined private, public, and charter schools together, autonomy of charter school teachers was higher than public school teachers. Still, private school teachers had the highest levels of autonomy (Podgursky, 2017). The same pattern (private being the greatest, then charter, and finally public being the lowest) was found for administrative support, colleague beliefs about

the school's mission (school culture), and cooperation amongst the staff. In this study, teacher pay was higher in public schools when compared to charter schools and private schools, and the workload was the same for all three.

Years of Experience

Due to the alarming rate of novice teachers exiting the profession, studies have examined differences among novice and experienced teachers. Several studies show that less experienced teachers report more burnout (Lau et al., 2005; Mo, 1991; Tschannen-Moran & Hoy, 2007). Additionally, less experienced teachers report greater stress and feelings of alienation and powerlessness (Anotniou et al., 2006; Black, 2001).

Researchers have suggested that differences in these well-being measures may be due to self-efficacy beliefs in novice teachers. Tschannen-Moran and Hoy (2007) found that experienced teachers have higher self-efficacy beliefs when compared to novice teachers, and posited that self-efficacy increases as teachers gain more confidence and time in the classroom. Interestingly, in the same study, they found that novice teachers reported less resource support and administrative support than experienced teachers, but not significantly less support from colleagues, parents, or the community.

Grade Level, Gender, and Race

Few studies have examined differences in well-being among grade level, race, or gender. From these studies, Goldring et al. (2013) found that high school teachers were paid the most, and class size was largest for elementary school teachers, then middle school teachers, and finally, high school teachers had the smallest class sizes. Limited evidence also shows that high school teachers had higher burnout and more stress when compared to elementary school teachers (Anderson & Iwanicki, 1984; Black, 2001).

In terms of gender, Lua et al. (2005) reported that there were inconclusive findings as to whether there was well-being difference among women and men, though, in their study, female teachers were more burned out than their male counterparts. Other studies found that female teacher reporter higher levels of stress (Antoniou et al., 2006; Bottiani, 2019), and the authors suggest that this increase in stress may be due to an increase in stress for women in the workplace in general. Other research reports inconclusive findings in job satisfaction by gender—some research suggests there are no gender differences (Anari, 2011), while others suggest that female teachers are more satisfied with their jobs (Black, 2001).

Lastly, the research examining the race/ethnicity of teachers in terms of well-being is sparse (Bottiani et al., 2019). Higher education literature suggests that there could be higher levels of the emotional exhaustion component in Black and Latinx faculty when compared to White faculty, but this finding was not supported (Lackritz, 2004). In a study on K-12 educators, similarly, there was no significant race/ethnicity difference in teacher burnout (Pas et al., 2012).

Summary

This dissertation investigates teacher resource needs, the associations between these resources and factors of well-being, and how these resources may differ across teacher demographics. Job resources are an essential component of the JD-R theory, and in turn, important in predicting workplace well-being. According to the JD-R theory and subsequent empirical research, the presence of job resources leads to engagement, whereas their absence leads to negative workplace well-being (Demerouti et al., 2001; Lewig et al., 2007; Schaufeli et al., 2008). Thus, investigating job resources is an essential piece of understanding and promoting teacher well-being.

However, there is a need for further research on teacher job resources. First, many studies do not extend the workplace measure outcomes to comprehensively investigate teacher well-being, including both negative and positive factors (Demerouti & Bakker, 2011). The current framework of this dissertation extends the JD-R model to suggest that resources and demands also interact with other negative and positive factors of teacher well-being, including stress, burnout, engagement, and job satisfaction (see Figure 1.1). Next, many researchers include a few job demands and job resources in their models to analyze the JD-R model and work engagement and burnout (e.g., Hakanen et al. 2006). However, there is a need to include more job resources (including job resources that have not yet been accounted for in previous studies) in these models and to study the relative importance of several job resources (Skaalvik & Skaalvik, 2018). Finally, though past research has identified some job resources for teachers, it is important to continually study resource needs as the landscape of education and education policy change overtime (Kyriacou, 2001).

In this work, I aim to examine teacher well-being using a comprehensive approach to investigate resource needs and teacher well-being. I will use two different methods to explore teachers' well-being—including the resources they require, the resources that are most important for their well-being, and how these resources vary across demographics (see Figure 1.2).

Study One: Analyzing Teacher Resource Needs using Twitter Data

The first study examines teacher resource needs by analyzing Twitter data. I used the hashtag #ArmMeWith and the Jobs-Demands Resources (JD-R) model to conduct a thematic analysis of the teacher-reported resource needs. The JD-R model posits that resource needs are essential in understanding and predicting workplace well-being outcomes such as burnout and work engagement, yet few studies specifically analyze resource needs that teachers require.

Teachers used the #ArmMeWith hashtag to write about the resources they really need, to start a conversation about what is lacking, and to oppose the suggestion that teachers should be armed with weapons considering recent mass shootings in schools. Resource needs were organized from these Tweets into themes of the JD-R model, and frequencies of the resource needs and themes were investigated. Further, regional differences in reported resource needs were examined to understand whether these needs differ across regions of the United States. This study analyzed teacher resource needs using social media data and revealed direct answers to the following research questions: (1) What are the resource needs that teachers require to positively impact their well-being in the workplace?; (2) Which resource needs are most often mentioned?; and (3) Do resource needs differ across regions of the United States?

Study Two: Examining the Relation Between Resources and Teacher Well-Being

The second study explores the relationship between resource needs and teacher well-being outcomes using survey methodology. I investigated resource needs that have been identified in the literature and resource needs discovered in Study 1 with positive and negative measures of teacher well-being using a survey given to a diverse sample of teachers. Previous work on the JD-R theory has included few job resources in confirming this model among teachers. Moreover, there is a lack of research that investigates which resources are most important for teacher well-being outcomes and how these resource needs may differ across school contexts. Study Two seeks to add to this body of research by answering the following research questions: (1) To what extent are psychological (optimism and self-efficacy), social (social support), physical (instructional resources and safety), organizational (school culture), and institutional resources (political support and diversity climate) related to measures of positive and negative teacher well-being?; (2) How do resources and well-being differ across

demographic variables (e.g., type of school, teaching position, years of experience)?; and, (3) What is the relative contribution of different resources in predicting teacher well-being?. Based on the JD-R theory and previous research on teacher well-being, I hypothesized that resources would be positively associated with work engagement and job satisfaction and negatively associated with burnout and stress.

Positionality Statement

A researcher's positionality affects all layers of the research process (Secules et. al., 2021). Positionality refers to how an individual's world views, various identities, and assumption show up in their research. Here, I acknowledge my positionality, how I show up to this research, and how my identities may impact my work.

I come to this work as a part of the teaching community. As a former middle-school teacher my interest in the teaching profession stems from my experiences of being a teacher myself and being in a community with my colleagues. I continuously investigate how my experiences in this community impact my work in researching teacher well-being. I am also involved in teacher communities in other ways—as a mentor, leading professional development series, and as a consultant. All these roles give me insight into the current lives of teachers and impact the way I view teacher well-being.

I am sure that my experience as a teacher is what led me to my deep interest in understanding and seeking to improve the working lives of teachers. This experience gave me a direct insight into what it is like to be a teacher in the United States. At the same time, my experience is just one—in a particular city, school, state, and community. I bring this experience with me in my work while also seeking to broaden and understand the working lives of teachers across the country in various contexts.

Beyond being a part of these communities, my identities are complex and impact all aspects of my research. As a White, U.S. Citizen, cisgender, disabled, heterosexual, college-educated woman, I hold many privileges that I work to unpack in my world as an educator and a researcher. I acknowledge these privileges here and continuously work with accountability partners to check myself in acknowledging the systems that play in my work.

Figure 1.1

Conceptualization of Teacher Well-Being (Expanded from Demerouti & Bakker, 2007)

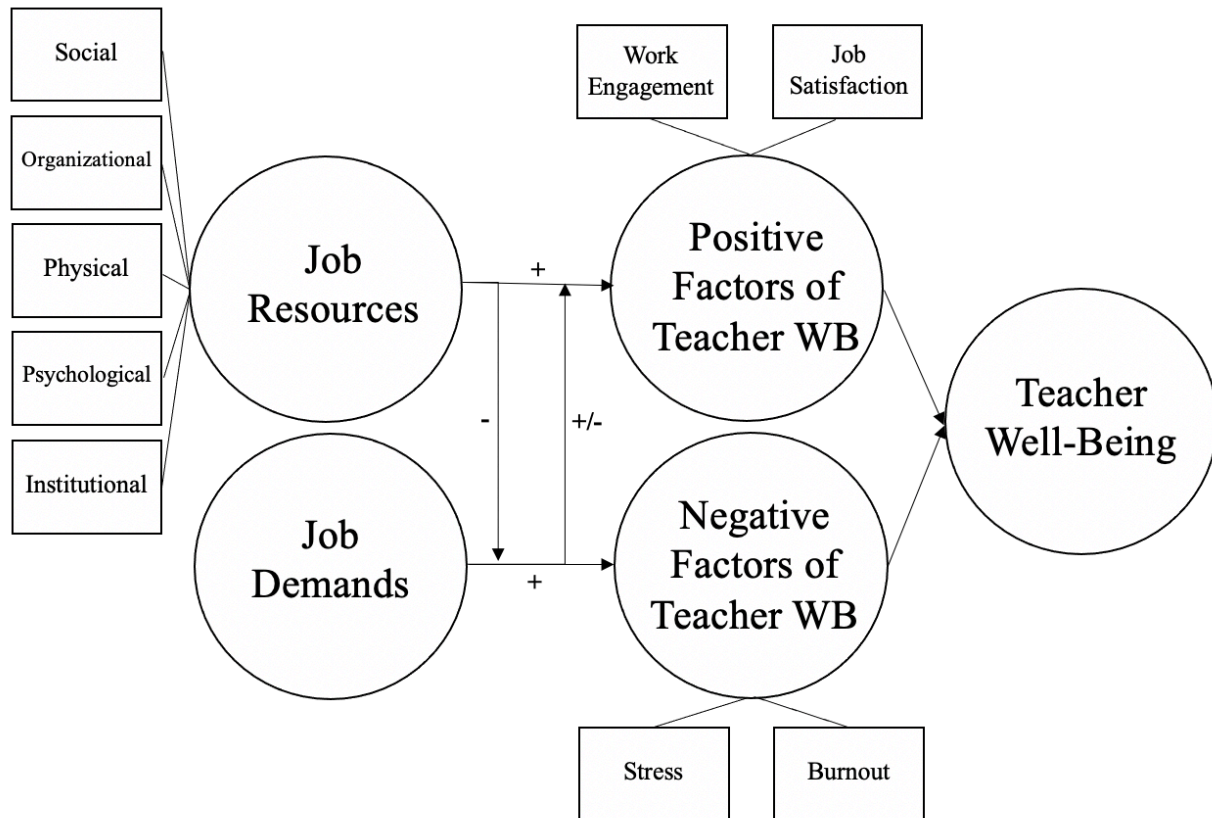
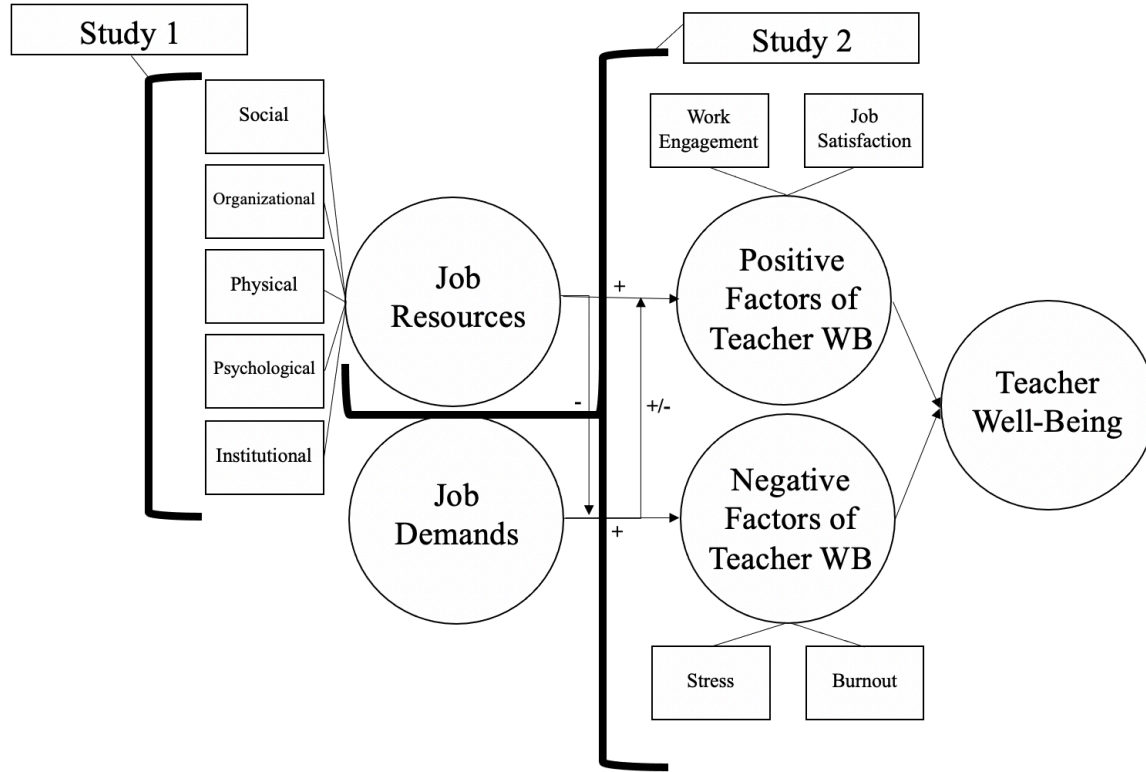


Figure 1.2

Model of Each Study's Role



Chapter 2 Analyzing Teaching Resource Needs using Twitter Data

One important component of the Job Demands-Resources model is identifying the specific job resources that promote workplace well-being and buffer against stressors that ultimately have negative consequences for well-being (Bakker & Demerouti, 2007). The current study investigates these teacher resource needs in the context of a Twitter hashtag campaign. This study is one of the first to use Twitter data to contribute to the research on teacher well-being. Thematic analysis of tweets will answer three research questions: (1) What resource needs do teachers report they require in the workplace?; (2) Which resource needs are reported most frequently?; (3) Do these resource needs differ across regions of the United States?; and (4) Do the reported resources fit into the original JD-R resource categories? The results have implications for understanding teacher-centered perspectives on the resources they need most to do their jobs. The results highlight factors that can decrease teacher stress, teacher burnout, and teacher attrition, and improve overall teacher well-being.

The Context: #ArmMeWith

On February 14th, 2018, a gunman and former student opened fire at Marjory Stoneman Douglas High School in Parkland, Florida. It was the deadliest shooting at a high school in United States history—17 students and staff members were murdered, and 17 others were injured. This tragedy came at a time of heightened discussion around gun control in the United States following other attacks in Las Vegas, Nevada, and Sutherland Springs, Texas.

In response to the Parkland shooting, President Donald Trump made several public statements, including prayers and condolences to the families and suggestions for how to make

schools a safer place. During a White House listening session, President Trump stated that arming teachers could stop attacks in the future: "If you had a teacher who was adept with the firearm, they could end the attack very quickly" (Merica & Kelin, 2018).

Teachers on social media outlets responded to several politicians, like President Trump, who suggested arming teachers as a possible response to the attack. A hashtag, #ArmMeWith, was started by two teachers as a movement for educators to make suggestions for not only how to stop mass school shootings, but to state their immediate needs (Bacon, 2018). These teachers encouraged other teachers to join in on calling attention to teachers' needs while also "exposing the absurd notion" that teachers carrying guns would lead to safer classrooms (Meixler, 2018). Ultimately, teachers tweeted using the hashtag to make suggestions for how the money that would be potentially used to arm teachers could be better spent. Within one week, there were over 80,000 uses of the hashtag on Twitter.

Teachers and Twitter

The internet and interactive web tools offer places for people to connect on a personal and professional level. The internet is increasingly used as a space where people can connect around shared interests, be creative, work in teams, and circulate information (Jenkins et al., 2009). Twitter is one of the largest social networking websites, and many teachers use the platform for online professional and personal activity.

Twitter users post short messages called 'tweets' to other users. These tweets can include text, images, videos, and links to other websites. Preliminary research has examined both the motives and ways that teachers use Twitter and other online social networking web sites. In their survey of 494 teachers, Carpenter and Krutka (2014) found that teachers describe Twitter as a practical, accessible, and interactive form of professional development. In another study, Wesely

(2013) linked the use of Twitter for teachers to sustained teacher learning. This study used a combination of interviews, online observation, and online documents to investigate how teachers engage in professional development online. They found that Twitter can be linked to meaningful teacher professional development. Similarly, Wright (2010) found that teachers used twitter for pedagogy, planning, and a sense of community.

Twitter can be a useful platform for engaging in professional development topics, but this is not the only reason teachers engage on the online platform. Hur and Bush (2009) investigated why teachers used online communities. They found five reasons for participating in these communities: (1) sharing emotions, (2) utilizing the advantages of online environments, (3) combating teacher isolation, (4) exploring ideas, and (5) experience a sense of camaraderie. In the survey mentioned previously, Carpenter and Krutka (2014) also reported that teachers said using Twitter helped them battle feelings of isolation and made them feel like they were part of a broader community. Teachers use Twitter not just for professional development, but also as a means of connection and communication, and in the case of the current study, teachers use Twitter as a vehicle to communicate their needs and advocate for change.

Current Study

The current study uses the Twitter campaign #ArmMeWith to investigate teacher perceptions of job resource needs, and to group these needs using the JD-R theory resource categories of physical, psychological, social, or organizational resources (Demerouti & Bakker 2011). The aim is to offer a unique view of the resources that teachers report they need and explore potential further categories of resource needs. When education policies and systems change over time, demands and resources may also change; it is important to investigate teacher well-being in the present time due to the changing safety issues that teachers are navigating as

they work in schools in the United States. The goal of studying teacher-centered conceptions of resource needs is to highlight solutions that have the potential to increase teachers' resources, which in turn will help them cope better with personal and contextual stressors.

By using Twitter data, this study seeks to understand resource needs directly from teachers who have chosen to voice their concerns. For researchers, social media platforms such as Twitter offer diverse and large sources of data that can be accessed quickly and inexpensively (Jürgens, 2012). Moreover, in an analysis of Twitter data, the themes are discovered in a sample of self-initiated responses and voluntary disclosure. Research shows that teachers use Twitter for both professional development (Carpenter & Krutka, 2014) and to experience a sense of community and combat teacher isolation (Wright, 2010). Therefore, Twitter offers a unique platform to investigate broader teacher conversations online.

Method

Procedure

Data were downloaded from Twitter using Sysomos software commonly used for gathering social media data. A search query was conducted to select tweets that included '#ArmMeWith' during the first week at the start of the campaign (February 20th, 2018—February 27th, 2018). To focus on original statements, the tweets that had 'RT' or 'retweet' were omitted, and the country was defined as 'USA' (given that the hashtag campaign was directed towards teachers in the United States). These search criteria resulted in 6,607 tweets. The data from Sysomos included source (Twitter), link to tweet, time, author ID, author name, author URL, gender, language, state, city, sentiment (positive, negative, and neutral), tweet content, biography, and post source. The author ID, author name, author URL, city, and biography were removed to anonymize the responses.

Brown et al. 's (2018) methods for cleaning social media data were used to ensure that the tweets in the data set were all relevant to the search criteria. Several exclusion criteria during the data cleaning process were applied, e.g., tweets that did not use the #ArmMeWith hashtag for the original purpose or tweets from news outlets promoting the hashtag were excluded. Most importantly, read both the tweets and tweeters' Twitter bios were read to make sure that all tweets were from teachers. Users who self-identified in their tweets or in their twitter bios as other than teachers ("As a principal, #ArmMeWith...") were excluded. After cleaning the data based on these criteria, there were 2,639 unique tweets remaining in the data set. The author ID, author name, author URL, city, and biography were removed to anonymize the responses.

Participants

Participants were teachers working in the USA and using the #ArmMeWith hashtag. The tweets that came from teachers that were 50.7% female and 26.5% male (23.8% did not include gender information). The sample of tweets represented all 50 states of the United States with 20.4% of the tweets originating from the Midwest region of the United States, 31.7% from the South, 21.8% from the West, and 20.4% from the Northeast (5.7% of the tweets did not include geographic information).

Analysis

To analyze the data, instruction of Braun and Clarke (2006) for conducting thematic analysis were followed. The overall analysis involved two stages. The research team involved me, an undergraduate assistant, and two faculty mentors whom we consulted with after coding. First, we used an inductive approach and searched for all resource needs. We read through the tweets several times, and developed codes of any resource that was mentioned by teachers. Our inductive approach meant that we did not use prior theory or research to guide which resource

we deemed necessary to code—we coded any mention of any type of resources. The undergraduate assistant and I developed the code book and then consulted two faculty to check both our codebook and our process of coding. We conducted inter-rater reliability sessions for coding and once we established interrater reliability, we conducted coding sessions individually. We met several times to review any questions that came up in our coding over the period of a few weeks until all the tweets were coded for resource needs. Then, a deductive approach was used that was informed by the resource categories distinguished in the JD-R theory to group the inductively derived codes into resource need themes. We used the JD-R categories (physical, psychological, organization, and social) to group the codes.

The research team included the primary investigator, a research assistant, and two faculty members. The tweets were read several times, and initial ideas about resource needs were written down. Next, initial codes were identified based on the ideas and notes gained when reading, and the codebook was written by the primary investigator and a research assistant (Krippendorff, 2018). These codes reflected resources mentioned by the teachers and identified patterns of the resource needs within the tweets. The primary investigator and research assistant discussed the codes, refined the specific description and inclusion criteria for each code, and generated definitions for each code with an aim to create an unambiguous coding structure. Interrater reliability checks were conducted to ensure that the codes were being coded reliably. The first author and research assistant coded all the data and conducted three interrater reliability sessions of 100 tweets. The average interrater reliability was excellent (Cohen's $\kappa = .91$; Cohen 1960).

The primary investigator and research assistant then coded all the tweets. Often, teachers listed more than one factor in their tweets. Thus, any given tweet could have more than one code. This resulted in a total of 5,751 coded excerpts. Then, a frequency analysis of the resource needs

codes was conducted. Given that a code could be represented more than one time in a single tweet, both the percentage of tweets that contained each code and the percentage of the codes in the total coded items were examined. In other words, the research team investigated how often a resource need was mentioned in all the coded excerpts and how many tweets mentioned a resource need. Linguistic Inquiry and Word Count (LIWC; Pennebaker et al. 2015) software was also used to confirm frequencies and check for reliability.

Next, the codes were organized deductively into themes by the primary investigator and faculty members. The JD-R theory categorizes resources needs into physical, psychological, social, and organizational resources (Demerouti & Bakker 2011). The codes were grouped into these themes, and the added theme of institutional resources was introduced to represent all the resource needs codes. To investigate the frequencies by region, States were divided into common geographical regions: Midwest, South, Northeast, and West. This data was used to conduct a frequency analysis of the resource need themes by region. This analysis involved examining the percentages of coded excerpts within each theme by region. Additionally, a chi-square test of homogeneity was used to test whether the frequencies of the resource needs themes were distinctly different across regions or whether the variation was due to sampling error.

Ethical Considerations

As social media data collection increases in popularity, the ethical questions involved are frequently discussed. Most importantly, the question of participant consent is an area of concern for research using social media. Previous research has argued that Twitter information is public domain, but that identifiable information should be excluded when possible (Shepherd et al., 2015). Following this principle and the related internet ethics guidelines set by the Association of Internet Researchers (www.aoir.org), personal information from the dataset was removed,

Tweets from users with private accounts were not used, and the data was stored under a password-protected folder. In addition, it is crucial for a researcher to be mindful of the context in which the social media data was shared (Stewart, 2016) and seek to respect the social media users' intentions for their statements. A researcher should not take a hashtag created by a specific community out of its context and, thereby, potentially misinterpret its meaning to those participating in the conversation. Therefore, the research team spent a considerable amount of time reading about the Twitter hashtag (e.g., Bacon, 2018; Merica & Klein, 2018) to ensure that our research is amplifying the voices of the U.S. teacher community.

Results

Resource Needs

In the current study, 18 codes that described various teacher resource needs and grouped into the JD-R resource themes were identified (see Table 2.1). Additionally, a novel theme was identified; institutional resources represent resource needs that appeared in the data but has not yet been recognized in the JD-R literature. The number of tweets in which each code was mentioned and how many times a code was mentioned overall were both investigated (see Table 2.2 and Figure 2.1). The following results are presented by starting with the resource needs theme that was mentioned the most by teachers and address the subsequent themes in the descending order. Within each theme, resource needs codes are presented by most reported to least reported.

Physical Resource Needs

The physical resource needs theme includes objective material needs that teachers suggested. Physical resource needs were most often reported by teachers, and 39.56% of all the

coded excerpts fell within this theme. This theme included the codes of materials, funding, technology, security, and physical space.

Materials. Materials captured teachers' needs for material goods in their classrooms and schools, such as basic school supplies. Materials were mentioned in 42.42% of the tweets and amounted to 28.27% of the total codes and were the most mentioned in both categories of frequency analysis.

Some teachers tweeted one specific material object that they needed, such as "paper" or "pencils." Other teachers tweeted a list of supplies that they need in their classrooms: "#ArmMeWith unlimited supplies. Pencils, copy paper, glue, scissors, construction paper, books, printer ink, laminate, binders, folders...colored pencils....". Another teacher listed a similar string of supplies and then stated, "It's sad we supposedly have money for weapons and ammo but not the actual essentials"—indicating that, for them, this list of supplies symbolizes the essential things that were missing. Other material goods that were mentioned included sanitization objects such as "enough Kleenex and hand sanitizer to make it through flu season" and "soap for the bathroom for my students." Additionally, teachers tweeted for curriculum to support their classroom instruction: "#ArmMeWith a curriculum that meets common core and ELD standards." Other teachers specifically indicated the need for access to books: "#ArmMeWith more diverse books and book sets...supplies, so teachers don't need to crowdfund basic classroom needs."

Funding. Funding included monetary support and the money needed for specific programs in schools and extracurricular activities. Funding was mentioned in 11.48% of the tweets and amounted to 5.56% of the total codes.

Many teachers mentioned the specific need for funding: "How about putting that funding into schools." Other teachers mentioned the need for funding for extracurricular activities: "#ArmMeWith funds for more extracurricular activities and clubs. Help us connect all students to something positive." Some teachers developed even more specific ways to use funding. For example, one teacher mentioned *how* they would use funds for their students: "#ArmMeWith funds to pay for all AP¹ students to take the exam." Lastly, teachers mentioned funding by suggesting specific areas of education that need funds: "#ArmMeWith...more funding for special education!"

Technology. In this code, the focus is on teachers' need for technology in their classrooms and schools, such as the availability and quality of computers, internet, and building technology. Technology was mentioned in 4.58% of the tweets and amounted to 2.31% of the total codes.

Teachers mentioned physical technology such as "computers," "document cameras," and "iPad screens to promote technology literacy." Other teachers mentioned technology that simply "works" or that is updated: "#ArmMeWith...working Wi-Fi"; "more working computers"; "updated technology"; "#working copy machines would be nice."

Security. Security captured teachers' need for increased security measures in their schools, including security-related staff roles and security training and equipment. Security was mentioned in 3.94% of the tweets and amounted to 1.84% of the total codes.

Many teachers expressed the need for staff roles to increase safety measures in their schools: "#ArmMeWith trained security on campus that will place staff & family at ease." Other

¹Advanced Placement program

teachers mentioned safety plans and security equipment. For example, this teacher mentioned security features that could be added to their school: "I have experienced an active shooter situation in my school building. #ArmMeWith metal detectors, wands, and a resource office on campus to help students and staff feel safe." Another teacher mentioned specific security training: "ALICE training all morning...#ArmMeWith a plan to keep as many alive as possible." Lastly, a teacher mentioned a specific security measure for their classroom: "#ArmMeWith a classroom door that locks."

Physical Space. In this code, the focus is on teachers' need for improvements in physical school buildings, such as improvements to classrooms, updating furniture for learning, and enhancements to the school building. Physical space was mentioned in 2.69% of the tweets and amounted to 1.56% of the total codes.

First, physical space emerged in *missing* spaces for teachers and students. One teacher stated, "#ArmMeWith...how about a school library? I've never worked at a school that hasn't had a library." Other teachers suggested "a new basketball court," "a science lab," and "a working auditorium so that we can create events for students and families." Teachers also brought up building renovation needs such as "building repairs" and "paint to fix the chipping peeling on my classroom walls." Moreover, some teachers mentioned the need for changes in furniture: "#ArmMeWith desks and chairs that are not broken" or "enough" desks for all their students. Lastly, teachers discussed basic needs and sanitary complaints. One teacher said, "#ArmMeWith a roof that doesn't leak, a building without rodents, and clean air vents." Another said, "#ArmMeWith...mold free classrooms; water fountains that work."

Organizational Resource Needs

The organizational resource needs theme includes changes to school structure and job-level resource needs. Organizational resources accounted for 21.75% of all the coded excerpts. This theme included the codes of time, class size, pay, training, testing, and school culture.

Time. Time captured teachers' need for more time to deliver instruction and build relationships with students. For example, teachers reported the need for more time to plan and prepare for instruction. Time was mentioned in 14.81% of the tweets and amounted to 7.79% of the total codes.

Teachers tweeted about the need for more time for classroom instruction: "#ArmMeWith more days on the calendar for teaching and learning." Time was also referenced through building relationships with students. One teacher tweeted: "#ArmMeWith time to get to know my students as young adults, not numbers and statistics." Another teacher mentioned time in terms of teaching specific skills: "#ArmMeWith time and resources to truly address the social and emotional needs of my students; time to build relationships with my students, time to help all students find their purpose." Though teachers mentioned time in reference to needing more time with students, they also mentioned needing more time for themselves. Some indicated needing more time for "prep" and a "planning period." Another teacher used the hashtag to talk about personal time: "#ArmMeWith time for self-care." Lastly, teachers mentioned needing time to work with other teachers: "#ArmMeWith time to collaborate with my colleagues."

Class Size. In this code, teachers discussed their need for decreases in class size. For example, class size included tweets about lower student-ratios and having smaller class sizes. Class size was mentioned in 10.11% of the tweets and amounted to 4.66% of the total codes.

Some teachers tweeted "smaller class size" in their #ArmMeWith response. Another teacher tweeted, "#ArmMeWith...more time for one-on-one instruction by reducing class

sizes"—suggesting that individual instruction time can increase by decreasing class size. Lastly, a teacher suggested that decreasing class sizes will help them get to know their students better: "#ArmMeWith class sizes that I can spend more time building relationships with each child."

Pay. Pay captured teachers' need to be compensated fairly. For example, pay included increases in salary, more bonuses, and benefits such as health care and parental leave. Pay was mentioned in 6.63% of the tweets and amounted to 3.48% of the total codes.

Firstly, teachers addressed the need for increases in salary: "#ArmMeWith a salary comparable to other professionals with the same education." Furthermore, many teachers also tweeted with the sentiment that their pay interfered with other aspects of their life—such as paying off student loans (e.g., "A salary that can pay off my student loans"), and having to work a second job (e.g., "a professional rate of pay and a benefits package that is enough to support a family without having to work a 2nd job"). Teachers wanted pay that is fair to the amount of work done (e.g., "a salary that reflects the fact I actually work twice as many hours as you say I do"), and the amount of education and experience that a teacher has (e.g., "Pay that reflects my Master's degree and 28 years of service"). Teachers also mentioned other aspects of pay, such as benefits. One teacher tweeted, "#ArmMeWith paid family leave so I will keep my accrued sick leave for after I come back to work. My kids are almost 10, and I still can't build my days up." Another tweeted about retirement: "#ArmMeWith a pension plan that will allow me to retire when I've dedicated 30 years to the profession."

Training. In this code, the focus is on teachers' need for more professional development. For example, teachers tweeted about specific training and learning opportunities that teachers need. Training was mentioned in 4.62% of the tweets and amounted to 2.22% of the total codes.

Many suggestions included increasing the opportunity for "quality professional development." Some teachers also discussed continuing their education: "#ArmMeWith opportunities for Higher Education without going into debt for the rest of my life." Other teachers mentioned specific types of training that they would like to receive, such as "trauma-informed," "neurodiversity respectful teaching," and "racial bias training." Lastly, teachers suggested other avenues of professional development: One teacher tweeted, "#ArmMeWith the strength to be a better teacher by going to a National Conference."

Testing. Testing captured teachers' suggestions for decreases in standardized testing. Here teachers tweeted about less time devoted to testing and alternative ways to test students. Testing was mentioned in 4.47% of the tweets and amounted to 2.05% of the total codes.

Many teachers discussed the need for "less standardized tests." As one teacher said, "less stress for students...too much test(ing). Less test = more quality, more quality = better values." Many noted the "pressure" and time it takes to prepare students for standardized testing: "#ArmMeWith less energy on test scores." Lastly, the need for a shift in priorities was noted in the tweets—"# ArmMeWith ...a vocational focus rather than tests."

School Culture. School culture captured teachers' need for changes in school norms. For example, school culture included ideas on school policies, rules, and procedures. School culture was mentioned in 3.33% of the tweets and amounted to 1.55% of the total codes.

First, teachers discussed changes in overall school rules: "ArmMeWith discipline policies that keep kids in schools." Additionally, teachers discussed changes that come directly from governing bodies of the school: "# ArmMeWith a school board." Others directly mentioned school culture: "#ArmMeWith a school culture build on relationships before data."

Social Resource Needs

The social resource needs theme includes the additional people and support that teachers need to do their job. Social resource needs accounted for 20.34% of the coded excerpts. Social resource needs included the codes of counseling services, social support, and support staff.

Counseling Services. In this code, teachers recognized the need to increase the number of counselors, psychologists, and social workers at schools and the need for better access to mental health services. Counseling services were mentioned in 17.92% of the tweets and amounted to 11.26% of the total codes.

Many teachers mentioned the counseling service staff they need: for example, "#ArmMeWith resource personnel (School psychologists, family counselors, social workers, guidance counselors) who have reasonable caseloads." Moreover, this teacher described why they want counselors in their school: "#ArmMeWith enough counselors in my school to help my kids tend to their own social and emotional needs so that I can educate the next generation's citizens effectively." Another teacher asked to be armed with these professionals "to help my student learn how to navigate their complex emotions."

Social Support. Social support captured teachers' needs for support amongst community members and school members. For example, support from administration, colleagues, principals, and students was mentioned here. Social support was mentioned in 11.02% of the tweets and amounted to 5.58% of the total codes.

Some teachers said: "#ArmMeWith support," but others described what support meant to them, and whose support they needed. This teacher mentioned wanting support from the community and parents: "#ArmMeWith ...community support, involved parents, and great colleagues." In-school support measures were also mentioned: "How about we arm teachers within school support systems to reduce the already high burnout rate they experience." Many

teachers mentioned needing more administrative support and specifically assistant principals:
"#ArmMeWith more assistant principals to help support teachers."

Support Staff. Support staff captured teachers' need for support roles in their school. For example, support staff included more librarians, substitute teachers, and nurses. Support staff was mentioned in 7.12% of the tweets and amounted to 3.60% of the total codes.

Several types of staff members were highlighted in these tweets: "more support staff for small group/individual behavioral, emotional, and academic sessions"; "janitorial staff"; "enough subs so we don't have to stress when we have to be out sick"; "how about a full-time staff ASL interpreter"; and "Certified Librarians back in our libraries." Notably, nurses were mentioned many times in the tweets: "My school has ONE nurse per FOUR elementary schools.
...#ArmMeWith more nurses, so that sick children can be properly cared for."

Psychological Resource Needs

Our data did not include the personal resources distinguished in the JD-R theory (e.g., positive self-evaluations), but teachers mentioned various psychological resources instead. The psychological resources relate to desirable psychological characteristics of teachers themselves and of their schools, and this theme includes two codes: personal strengths and autonomy. Psychological resource needs accounted for 10.19% of all the coded excerpts. The codes within this theme are described in more detail below.

Personal Strengths. This code encompasses single words and word lists that teachers used when tweeting with the hashtag. For example, teachers tweeted words such as "compassion," "creativity," "strength," "humility," "joy," "courage," and "love," or lists of words, such as: "#ArmMeWith Wisdom, knowledge, insight, empathy, and patience." It is not possible to determine from these single words and word lists whether teachers meant that they need to

have "compassion," "joy," etc., or whether they wished these positive factors to characterize schools more generally. Therefore, this code is characterized by factors as relating personal strengths needed by teachers. The code was mentioned in 6.93% of the tweets and amounted to 6.35% of the total codes.

Autonomy. Autonomy captured the need for a teacher to be able to make their own decisions in the classroom. For example, autonomy included teachers being able to make their own decisions, being trusted to do their job, and being respected. Autonomy was mentioned in 7.58% of the tweets and amounted to 3.84% of the total codes.

Teachers discussed the trust, respect, and agency they needed to be able to do their job. For example, one teacher said, "#ArmMeWith ...a community that supports and trusts its teachers." Another teacher stated, "#ArmMeWith: Trust due an educated, licensed, committed professional, Agency to do what is best for the kids." These tweets imply a lack of trust to do "what is best for the kids." Another important piece of autonomy includes the ability to make decisions on their own: "#ArmMeWith the respect to do the job I was highly educated and trained to do"; "#ArmMeWith Recognition as an expert...Autonomy to work without interference." These tweets reference the lack of respect that comes along with teaching and the lack of ability that teachers must make their own professional decisions. Lastly, one teacher tweets, "#ArmMeWith more autonomy and freedom to be creative in the classroom"—suggesting that autonomy means the ability to make decisions and the freedom of choice.

Institutional Resource Needs

The institutional resource needs theme reflects changes or resources needs at the institutional level. This theme was generated to capture the codes of political change and social change. Institutional needs accounted for 8.15% of all the coded excerpts.

Political Change. In this code, the focus is on teachers' need for government-initiated change. For example, political change included the need for changes in laws and policies and politicians that support teachers. Political change was mentioned in 8.60% of the tweets and amounted to 4.19% of the total codes.

Some teachers specifically talked about laws. As the hashtag is rooted in the issues of gun violence in schools, it is not surprising that teachers mentioned: "common-sense laws that protect a safe learning environment." Interestingly, other laws were brought up in the tweets. One teacher tweeted, "#ArmMeWith...immigration laws so my students can focus on learning instead of stressing that they or their loved ones will be deported." Additionally, teachers discussed specific people in the political sphere. For example, one teacher said, "#ArmMeWith the assurance that legislators value students' lives over the money of lobbyists." Another teacher spoke more specifically about the connection to education: "#ArmMeWith lawmakers and policymakers that oversee educational policy who've actually worked in or even been in a public school."

Social Change. Social change captured needs regarding inequity and social justice in schools. Social change was mentioned in 7.54% of the tweets and amounted to 3.96% of the total codes.

Social change spoke broadly about inequities that teachers face or notice in their profession. First, teachers used the hashtag talked about students experiencing poverty (e.g., "ample resources for students in poverty"). Specifically, one teacher discussed the need for food and clothing for students: "#ArmMeWith granola bars and fruit for those who haven't had breakfast...warm clothes for students who have immigrated." Teachers also used the hashtag to call for "support for homeless students" and "the tools to dismantle the school-to-prison

pipeline." Moreover, though less often, teachers used the hashtag to call out systemic injustices for teachers. For example, one teacher tweeted, "#ArmMeWith people in power who respect Black & Brown teachers...This means actually valuing Teachers of Color AND hiring them in the first place as a start."

Regional Frequencies

We investigated the frequencies of resource need themes across geographical regions of the United States (the Midwest, the South, the Northeast, and the West). These frequencies were examined to explore any trends appeared in differences in the needs of teachers across regions (see Figure 2.2). Overall, frequencies across regions were similar. The chi-square test of homogeneity was not significant ($p > .05$), such that the variance of resource need themes across regions did not differ significantly.

Discussion

The current study explored teacher-reported resource needs and investigated their overall and regional frequencies. Teachers addressed all broad resource themes suggested in the JD-R model, but the code-level findings provide important insights into what these resource themes mean to contemporary U.S. teachers (e.g., the importance of security as an aspect of physical resource needs). The findings highlight some resource themes that have been recognized in teacher well-being literature, but not addressed in studies on teacher well-being building on the JD-R theory (e.g., physical resources) thus expanding the understanding of resource types that need to be paid attention to when studying interactions between teachers' job demands and job resources. A new resource theme not previously mentioned in the JD-R literature was also discovered—institutional resource needs. Institutional resource needs captured the changes that teachers need in the political and social systems to secure their well-being. The frequency

analysis revealed the importance of physical and organizational resources to teachers, as these were reported most often. Moreover, no differences between frequencies of resource need themes by region were found.

Key Findings and Practical Implications

This study highlights the variety and frequencies of the physical resource needs that teachers reported. Some physical resource needs have been discussed in conversations surrounding teacher well-being (e.g., Education Service Advisory Committee, 1998), but have not yet been categorized as resources in research using the JD-R framework. Materials both for teachers and students were the most frequently mentioned resource need overall and, indeed, materials have been documented in the earlier literature as an important resource for teachers. For instance, the Education Service Advisory Committee (1998) pointed out the need for adequate teacher materials and resources. Other resource needs in this theme, such as the needs concerning the physical space, do not appear as often in the literature on teacher well-being. In our results, physical space needs ranged from mold-free classrooms to a library or theatre space in their school. Although these spaces might not be traditionally thought of as factors of teacher well-being, this study highlights the unique spaces that teachers need and the quality of these spaces. Researchers may consider how the physical spaces in schools can challenge or support teacher's well-being.

The need for security was a novel finding in this study. To my knowledge, the need for security has not yet been identified as a type of physical resource in the JD-R theory, and neither has it yet been mentioned in the literature on teacher well-being. Security is clearly something that teachers think about on the job today, and they reported the need for improved security measures. It is interesting that security consistently originated from other factors than being

armed, such as secure buildings or security plans. There are various reasons why teachers may have focused on security in their tweets. That response fits the larger problem that the hashtag tackles, and, as many teachers participate in active shooter training, it is possible that security emerged in response to having to think about keeping the classroom safe in the event of an emergency. Nevertheless, according to Maslow (1943), security is an important and fundamental human need. Those concerned with teacher well-being should pay particular attention to the growing need to feel safe.

Organizational resource needs were the second most frequent category of resource needs. Many of these organizational resource needs have been documented in the teacher well-being literature. Class size, pay, and career opportunities have been identified as factors that impact teacher attrition (Macdonald, 1999). These factors were also highlighted as important organizational resource needs in the current study. Teachers need professional development training, pay that matches their education level, positive changes in school culture, and changes regarding testing in schools. Indeed, some researchers suggest that various types of training (e.g., training on student mental health or professional development for teacher and student well-being) should be increased in schools (Schley et al., 2017; White & Kern, 2018), and research on teachers using JD-R theory also recognizes professional development and training as important resources (Simbula et al., 2012). There is also evidence to suggest that organizational well-being training increases the well-being of employees (Sutton et al., 2016). Regarding the finding of changes in time, Castro et al. (2010) found that a significant risk factor of teacher well-being was heavy workload (paperwork, meetings, grading). This aligns with teachers reporting the importance and demand of time in the current study. Reorganizing time within the school day or school year could combat the stressor of workload. Exploring how a teacher's time is spent at

school and re-arranging schedules based on teacher suggestions are likely to increase teacher well-being.

The third most frequently mentioned resource category, social resources, has also been previously highlighted in the teacher well-being literature (e.g., Ju et al., 2015; Olsen & Anderson, 2007) and JD-R literature (e.g., Anderson & Olsen, 2006; Hakanen et al., 2006). Importantly, social support is negatively associated with teacher burnout and positively associated with teacher retention (Ju et al., 2015; Olsen & Anderson, 2007). Moreover, a range of social support sources have been identified in the teacher well-being literature and as resources in the JD-R model—including both administrative support and colleague support (Hakanen et al., 2006; Simbula et al., 2012). In the current study, teachers also discussed other staff roles and services that they need. Specifically, counseling services were mentioned by several teachers. The national student to counselor ratio in the United States was 482:1 in the 2014-15 school year, while the nationally recommended ratio is 250:1 (National Association for College Admission Counseling & American School Counselor Association, 2015). This suggests that mental health care resources are lacking in schools and that teachers often may feel like they need to take on this role for students. The lack of counseling services in schools is an important factor to consider in teacher well-being.

Psychological resource needs have also been highlighted in the literature on teacher well-being, and this study confirms the importance of autonomy. Autonomy has also been identified as a resource need in the JD-R literature on teachers (Hakanen et al., 2006). Cameron and Lovett (2014) conducted a study to examine teacher satisfaction over time and found that teachers who were satisfied with their job were the ones who regularly experienced agency. This research also uncovered personal strengths that teachers indicated they need to do their job—ranging from

wisdom to joy, and courage to humility. These needs highlight the socially demanding situations requiring teachers to invest more of themselves than simply their professional skills to achieve high-quality professional performance and to maintain their own well-being. Few studies have, however, investigated the role of personal strengths for teacher well-being (e.g., Chan, 2009).

The resource need category frequencies were similar across regions of the United States. This finding suggests that the common areas of teacher needs are universal rather than unique to any region. The shortage of resources for teachers is a national issue, not a regional one. This finding suggests a call for national attention and effort to address teacher resource needs that will positively impact teachers' lives.

Theoretical and Methodological Implications

This study has several theoretical implications. An important extension to the JD-R theory was discovered. Institutional resource needs have not been identified in the JD-R theory and research as a category. Teachers mentioned institutional resource needs in various ways. For example, teachers noted specific issues that affect teachers of color and the need for more teachers of color in education. This highlights the need to investigate the experience of teachers of color and the added stressors that occur among teachers with these marginalized identities. Additionally, this category of resource needs suggests that teachers are advocating for social changes within schools. Future research may consider social inequities that affect teachers and students. Political change was also a novel resource need in the institutional theme. Like security, political change may have been amplified due to the nature of the hashtag. However, with increasing teacher strikes, politics may play a significant role in how teachers view their profession. Future research should investigate how state and national legislation play a role in teacher well-being. Johnson and Down (2013) suggest that research on teacher well-being thus

far has downplayed the political impact on teachers. They take a socially critical approach to the hyper-individualization of the study of teacher well-being and argue that the situational context is important. This research supports this approach in suggesting that institutional resource needs should be considered when investigating teacher well-being.

Lastly, this study has important methodological implications. There are several benefits of using social media data. The first is the ability to receive many responses in a short amount of time. Using social media data gave us access to thousands of teacher responses. Next, Twitter data allowed us to avoid some aspects of research bias. While survey and interview questions may prime participants to answer in particular ways, social media data allowed us to investigate spontaneous statements that may represent teachers' genuine thoughts. Finally, this data allowed us to study the phenomenon in real-time. Teachers were responding to this hashtag with emotionally laden reactions to occurring events, and social media data give us the potential to study these responses. Future research should consider using Twitter data in investigating teacher well-being.

Limitations

This study highlighted pressing teacher needs. However, though there are many benefits of using Twitter data, there also are some limitations. First, we should consider the Twitter prompt itself. The nature of the hashtag was political. Given the political divide over issues of gun control in the US, it is possible that this sample has some political bias. Moreover, the nature of the hashtag might have swayed the frequency of specific factors. For example, the counseling services theme may have been mentioned more often due to the public conversation of mental health services in schools to approach the mass shooting incidents. This hashtag offered a unique

insight into teacher resource needs, and future studies on teacher resource needs can measure and assess the new and existing resource needs we found through Twitter.

Next, we should consider Twitter users. It is possible that there is something unique about teachers who use Twitter in the first place. According to a survey conducted by the Pew Research Center (2018), Twitter users are younger, more educated, and wealthier than the general public. In the context of the current study, this might mean that younger teachers were more likely to respond to the hashtag. In continuing the study of teacher well-being, social media data can be a useful way to understand what teachers need, but it is also important to consider the hashtags being used for data collection and to use other methods of data collection that can allow for random sampling.

Conclusion

This study extends the literature of teacher well-being by identifying areas of teacher resource needs with social media data that could be the first step toward efforts to decrease teacher stress and burnout and increase engagement and commitment. This study has important practical, theoretical, and methodological contributions to teacher well-being literature. We found a range of teacher-reported resource needs—including suggestions that have been well-documented in the literature on teacher well-being, but also resource needs that have not been well-documented in the literature, such as the need for security, counseling services, social change, and political change. The current study also identified the teachers' need for institutional resources that are often neglected in theories on workplace well-being. Theories, research, and practices that address teacher well-being should consider and incorporate these novel teacher resource needs to understand teacher well-being more comprehensively.

Table 2.1*Themes, Codes, Definitions, and Example Excerpts*

Theme	Code	Definition	Example Excerpt
<i>Physical</i>	Materials	School supplies, curriculum, or material goods needed for classroom instruction.	"#ArmMeWith more books"
	Funding	Increases in funding for specific programs or extracurricular activities.	"#ArmMeWith more money for after-school programs"
	Technology	Computers, functioning internet, and updated building technology.	"#ArmMeWith internet that always works"
	Security	Increases in security measures, including security guards, security training, and police officers.	"#ArmMeWith resource officers"
	Physical Space	Improvements in the physical school building, including rooms, the exterior building, and furniture.	"#ArmMeWith a school with air conditioning and working heat"
<i>Organizational</i>	Time	More time in the school year, more time in the school day, or more time to plan and prepare for instruction.	"#ArmMeWith more time to prep"
	Class Size	Decreasing the student-teacher ratio and smaller class sizes.	"#ArmMeWith reasonable class sizes"
	Pay	Increases in wage, more incentives and bonuses, and more benefits such as health care and parental leave.	"#ArmMeWith a livable salary"
	Training	Professional development, instructional training, and learning opportunities for teachers.	"#ArmMeWith more social-emotional training"
	Testing	Decreases in standardized testing or increases in alternative ways to test students.	"#ArmMeWith less standardized testing"

	School Culture	Changes in the ways that schools function at the school level.	"#ArmMeWith a school culture based on character development, not data"
<i>Social</i>	Counseling Services	Improvements in mental health resources, the need for more counselors, psychologists, and social workers.	"#ArmMeWith counselors who have time to counsel, and support groups for abuse survivors"
	Social Support	Support from various stakeholders, including administration, colleagues, principals, the community, and students.	"#ArmMeWith support from my school board"
	Support Staff	Increases in staff positions: special educators, librarians, substitute teachers, and nurses.	"#ArmMeWith paraprofessionals and special educators so we can work together to give support to the students who need it most"
<i>Psychological</i>	Personal Strengths	A response that relates to personal or individual strengths.	"#ArmMeWith love and patience"
	Autonomy	Teachers making their own decisions, and trust and respect to do their job.	"#ArmMeWith a community that trusts its teacher to do what is best for kids"
<i>Institutional</i>	Political Change	Legislators and politicians that understand the needs of teachers and legislation that supports teachers and students.	"#ArmMeWith legislators who actually understand what educators need"
	Social Change	Social change in education in terms of systems of inequity	"#ArmMeWith leaders that actively work against systemic racism"

Table 2.2*Frequencies per Total Tweets and Coded Items*

Theme	Code	In how many tweets was the code mentioned?	Percentage of all tweets	How many times was the code mentioned?	Percentage of all coded items
Physical	Materials	1,120	42.42%	1,626	28.27%
	Funding	303	11.48%	320	5.56%
	Technology	121	4.58%	133	2.31%
	Security	104	7.58%	106	1.84%
	Physical Space	71	2.69%	90	1.56%
	<i>Total</i>		1,718	68.75%	2,275
Organizational	Time	391	14.81%	448	7.79%
	Class Size	267	10.11%	268	4.66%
	Pay	175	6.63%	200	3.48%
	Training	122	4.62%	128	2.22%
	Testing	118	4.47%	118	2.05%
	School Culture	88	3.33%	89	1.55%
	<i>Total</i>		1,161	43.97%	1,251
Social	Counseling Services	473	17.92%	642	11.26%
	Social Support	291	11.02%	321	5.58%
	Support Staff	188	7.12%	207	3.60%
	<i>Total</i>		952	36.06%	1,170
Institutional	Political Change	227	8.60%	365	6.35%

	Social Change	199	7.54%	221	3.84%
	<i>Total</i>	426	16.14%	586	10.19%
Psychological	Autonomy	200	7.58%	241	4.19%
	Personal Strengths	183	6.93%	228	3.96%
	<i>Total</i>	383	14.51%	469	8.15%

Figure 2.1

Percentage of Codes by Resource Need Themes

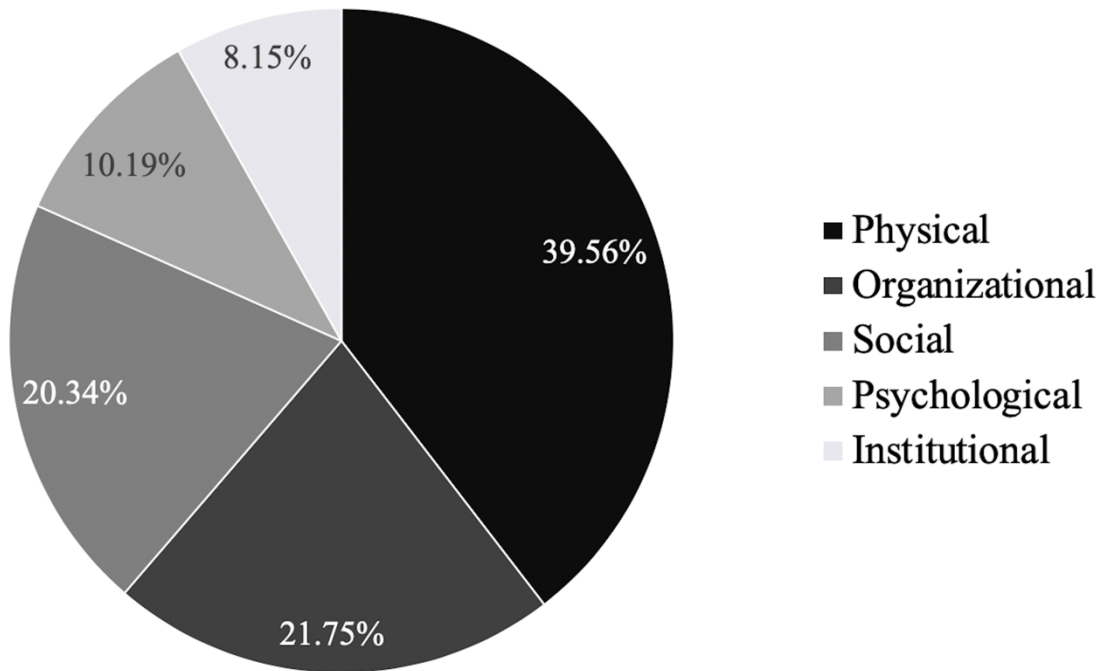
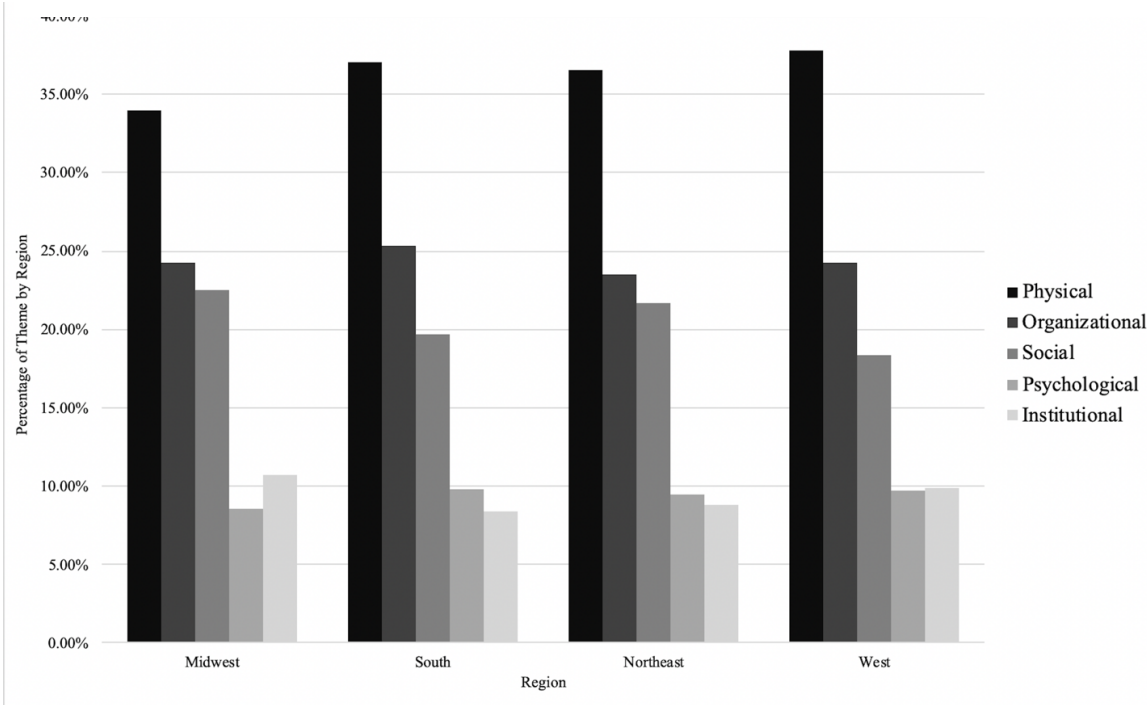


Figure 2.2

Percentage of Resource Need Themes by Region



Chapter 3 Examining the Relation between Resources and Teacher Well-Being

The Job Demands-Resources (JD-R) theory is an example of a workplace well-being model that includes positive and negative employee well-being outcomes. The model posits that job resources and job demands work in combination to predict these outcomes (Bakker & Demerouti, 2007; Demerouti et al., 2001). Relevant research has used this model to investigate teacher well-being (e.g., Dicke et al., 2017; Evers et al., 2016). While several studies have explored components of teacher well-being using the JD-R model, there are limitations to how this work has been done.

First, existing research has primarily focused heavily on job demands, and few studies empirically investigate the associations among specific job resources and well-being outcomes (Skaalvik & Skaalvik, 2018). In addition, most of the studies that include job resources incorporate few job resources in their models (Skaalvik & Skaalvik, 2018). Moreover, preliminary research using the JD-R model focuses solely on work engagement and exhaustion as outcomes and may overlook other important factors of well-being (Bakker & Demerouti, 2007). Second, most of the research on teacher well-being, including JD-R applications, is limited to specific groups of teachers, such as middle, urban, or private school teachers, which may limit the generalizability of this research (Beltman et al., 2011). The current study seeks to address these gaps by examining several job resources, extending the JD-R model to include other measures of positive and negative factors of teacher well-being, and recruiting a large and diverse sample of teachers across the United States.

Job Resources

The current study addresses eight job resources, including three more than Study One. The job resources from the first study (*optimism, self-efficacy, school culture, social support, and instructional resources*) were explored in more depth well-being literature in Chapter One. The following section will examine the three additional resources (*diversity climate, safety, and political support*) in the literature on workplace well-being. These resources were chosen from needs reported by teachers in Study One.

Diversity Climate

As a result of increased diversity in many fields, researchers are increasingly focused on how organizations can foster a positive climate that creates equitable working environments (Madera et al., 2016). Fair and integrative organizational policies, practices, and procedures that foster and maintain a diverse workforce make up what researchers (Mor Barak et al., 1998; Pugh et al., 2008) describe as the *diversity climate*. However, it is important to note that employees make cognitive judgments and appraisals of their workplace, influencing their perception of the diversity climate (James et al., 1990; Mor Barak et al., 1998). As such, the diversity climate can be perceived differently by different individuals in the same workplace. For example, one employee may perceive the organization to have a positive diversity climate, while another can view the same organization as having a climate that is unconcerned with a diverse workplace (Mor Barak et al., 1998).

There are several documented outcomes of positive diversity climates, including increases in job satisfaction, lower intentions of turnover, and higher organizational commitment (Chen et al., 2012; McKay et al., 2007, 2011). A closer look at the relationship between diversity climate and job satisfaction has identified that employees expect to be treated fairly by their organization (Turnley & Feldman, 2000) and that their organization cares about their growth as a

person (Greening & Turban, 2000). A positive diversity climate serves as a signal to employees that their organization cares for the overall well-being of employees and that the organization works on diminishing biases in the workplace (McKay et al., 2007), which in turn increases their job satisfaction and positive organizational attitudes (Chen et al., 2012; McKay et al., 2007). A positive diversity climate reflects on an organization's treatment of employees, increasing employee job satisfaction.

A positive diversity climate is significant for employees who are members of historically marginalized groups, as they are more likely to experience discrimination in the workplace (Chrobot-Mason, 2003; Waight & Madera, 2011). Workplace discrimination contributes to employees' stress and has an adverse effect on their well-being (Ryff et al., 2003). Moreover, members of historically marginalized groups are more likely to feel excluded in the workplace, decreasing well-being and job satisfaction (Combs & Milosevic, 2016; Mor Barak & Levin, 2002). A positive diversity climate is essential for those disproportionately affected by workplace mistreatment.

Safety

Maslow (1943) described how the need to feel physically safe and secure is an essential and fundamental human need. Those who work in professions such as healthcare, manufacturing, mining, transport, and energy production (Hayes et al., 1998; Griffin & Curcuruto, 2016; Guastello et al., 1999) have long been subject to security breaches and have needed procedures and resources to protect their safety and security. In such workplaces, safety accidents can be costly and result in physical and psychological harm to employees (Hayes et al., 1998). In addition to identifying how to reduce accidents and injuries at work (Griffin & Curcuruto, 2016), workplace literature also looks at safety climate and the perceived safety of employees.

Safety culture is a set of beliefs, norms, attitudes, roles, rules, and practices that minimize employees' exposure to danger (Pidgeon, 1991). One indicator of the degree to which a workplace embraces a safety climate is employees' perception of safety in the workplace (Zohar, 1980). A range of factors form an organization's perceived safety and security, including management's concern for employee safety, equipment, training, and communication about safety-related issues (Neal et al., 2000). Studies have examined the relationship between these factors and accidents and have documented that increases in safety are associated with decreases in these adverse outcomes (e.g., Hofmann & Stetzer, 1996; Niskanen, 1994).

There are several important outcomes of a positive safety climate. First, a strong safety culture has improved safety performance (Chen et al., 2017). Meanwhile, workers who hold a negative perceived safety climate tend to have an increased susceptibility to accidents (Hofmann & Stetzer, 1996; Salminen, 1995), report more job insecurity, anxiety, and stress, (Chen et al., 2017; Probst, 2002; Probst & Brubaker, 2001) and experience higher rate of accidents at work (Guastello et al., 1999). Conversely, workers with a positive perception of their workplace safety climate experience fewer accidents (Harrell, 1990; Hofmann & Stetzer, 1996). Finally, considerable empirical evidence suggests that greater individual safety compliance is associated with fewer adverse events, accidents, and injuries (Zohar, 2002; Nahrgang et al., 2011). Neal et al. (2000) investigated other outcomes of perceptions of safety in a sample of hospital workers. They found that perception of safety climate was associated with important individual outcomes such as knowledge of procedures, motivation, compliance, and participation. The perception of safety in the workplace is a critical component of employees' physical safety.

While the early workplace safety research focused on safety outcomes, more recent research has addressed the psychological and organizational costs of working in environments

where safety may be at risk. For example, Huang et al. (2016) surveyed truckers and found that positive safety climate perceptions were linked to higher job satisfaction, engagement levels, and a lower turnover rate. In addition, Gyekye (2005) established a positive association between perceived safety and job satisfaction in a study on industrial workers. Finally, the consensus among researchers is that promoting a positive safety climate and increases in training programs is useful for organizations and can increase employees' psychological health (Chen et al., 2017). Notably, there is no research to date that focuses explicitly on the perceived safety of teachers in the workplace despite the increasing physical threats of gun violence that teachers in the United State experience as mentioned in Study One.

Political Support

Another topic addressed in the well-being literature is the effect of political factors (Pirralha, 2017). Scholars define *political support* in various ways, including trust in political decisions and the people's perception regarding politicians' eagerness to work for national interest (Nikiporets-Takigawa & Avcinova, 2018). Similarly, Jorgensen et al. (2010) model political support attitudes as a part of well-being via people's perceptions of and participation in their community. They found that political attitudes towards officials are linked to a sense of community and well-being.

Since local and federal governments make policies that benefit the respective community members, those in charge of policy should understand the needs of their communities, and this understanding can enhance the subjective well-being of their constituents. Verlet and Devos (2007) conducted research to assess whether the government could increase the subjective well-being of community members. They found that political attitudes, local policy, and federal policy contributed to subjective well-being and happiness. In an extensive survey on the governance

and well-being in the United Kingdom, researchers found that the perceived quality of society was closely associated with individuals' satisfaction with their lives (Abdallah et al., 2016). However, members of marginalized groups, including low-income, women, and those experiencing insecure employment, had a lower perception of a functioning society and lower satisfaction with the government. There was also an association between perceived government effectiveness and increases in well-being. Overall, there are clear connections between perceptions of the political arena and support and community well-being.

Political perceptions also matter within organizations, as evidenced by research on how public organizations, including schools, are embedded in political systems and environments (O'Toole & Meier, 1999; Pandey & Wright, 2006; Stazyk & Goerdel 2011). Yang and Pandey (2017) define political support as how government officials approve of and encourage these organizations and their missions. They also argue that perceived political support affects public organizations' level of innovation and performance. This perceived support leads to positive workplace outcomes such as organizational effectiveness and performance (Moynihan & Pandey, 2005; Wang & Berman, 2001). Additionally, perceived elected official support has been positively associated with goal clarity for the organization (Yang & Pandey, 2017). Moreover, political support entities have the power to bring in financial and human resources, which, in turn, enhances organizations' agency (Meier, 2000; Yang & Pandey, 2017).

Finally, political support can serve as an external resource for organizations (Pfeffer & Salancik, 1978). In addition, the political arena can be seen as a resource, and the perceived support or lack of support is connected to whether resources, like funding, are available. Public organizations depend on resources to survive and thrive (Donaldson, 2001), and political support is a powerful external resource that influences organizations' successes or failures.

Study Aims and Hypotheses

The objective of the current study is to investigate the association between identified job resources and teacher well-being outcomes to answer the following questions: (1) To what extent are psychological (*optimism* and *self-efficacy*), social (*social support*), physical (*instructional resources* and *safety*), organizational (*school culture*), and institutional (*political support* and *diversity climate*) resources related to measures of positive and negative teacher well-being?; (2) How do resources and well-being vary across demographic variables (e.g., type of school, teaching position, years of experience)?; and, (3) What is the relative contribution of different resources in predicting teacher well-being?

The answers to these questions could have significant implications for extensions of the JD-R theory regarding well-being outcomes, the significance of novel resources (such as institutional resources), and which resources are most significant when considering interventions that aim to increase teacher well-being. Based on the JD-R model and past findings in the literature of teacher well-being, I hypothesize that these resources will be positively associated with work engagement and job satisfaction and negatively associated with burnout and stress. Further, this exploratory study examines the degree to which these resources predict well-being outcomes and how these relationships differ across contexts (e.g., type of school, teaching position, years of experience).

Method

This study utilized an online survey that included questionnaires on resources, workplace well-being measures, and demographic information.

Participants

Teachers were recruited to take part in the survey through social media, specifically Instagram. Participants for the current study were full-time K-12 teachers during the 2019-2020 academic school year and were able to give informed consent. All the participants reported at least one year of teaching experience and that they were working in a school district at a private or charter school in the United States when they took the survey. To detect a small effect using multiple regression with the study predictor variables (with $p < .05$), a sample size of 262 was required (Cohen, 1988; Soper, 2020). As a conservative estimate, the minimum sample size was set at 280. The survey was live for two days, and 1,929 teachers completed the survey.

On average, participating teachers had 8.72 years of teaching experience and were 25-34 years old. 7.7% of teachers were working in a private school, 82.9% in a public school, and 9.2% in a charter school. 2.8% were preschool teachers, 52.3% taught Kindergarten-5th grade (elementary), 24.2% taught 6th-9th grade (middle school), and 20.5% taught 9th-12th grade (high school). Teachers from all 50 states completed the survey—17.7% of these teachers were teaching in rural areas, 32.6% in urban/city areas, and 49.4% in suburban areas. 61.2% of the teachers surveyed had their masters. 89% percent of the teachers identified as White, 7.8% as Hispanic or Latinx, 2.9% as Black or African American, 2% as Asian or Asian American, .7% as Native American or Alaska Native, .2% as Native Hawaiian or other Pacific Islander, and .6% as Middle Eastern or Arabic. 98.6% of teachers identified as Women, .8% identified as Men, and .3% identified as Genderqueer or Non-binary.

Importantly, it should be noted that this data was collected during the health crisis that resulted from the COVID-19 pandemic. This pandemic changed the way schools operated in the Spring of 2020 when schools and teachers suddenly changed to remote learning with little to no

notice or preparation time. This survey was conducted in May 2020 at the beginning of the pandemic. The impact this change may have had on the result will be addressed in the discussion.

Procedure

A unique link to the survey was posted on teacher social media sites to collect information from a diverse sample of teachers. Researchers have been using social media to recruit research participants and have found these methods to be helpful in reaching samples of people that are representative of the population (Kosinski et al., 2015; Thornton et al., 2016). For this study, teachers were invited to participate in a study on teachers' working lives and were notified of the exclusion criteria through statements like, "We are recruiting full-time teachers who are working in a K-12 position to participate in our online survey."

Once teachers clicked on the link to participate in the study, they were presented with a consent form that described the scope of the project and informed participants that they could stop the survey at any time. They were asked to complete the survey in one sitting and were informed that their responses were anonymous. Next, they were screened for eligibility. To be qualified to participate in the study, teachers had to report that they had more than one year of teaching experience and were teaching at a private, public, or charter school in the United States. If they fulfilled the prerequisites, they were asked to respond to questions regarding their status of resources, well-being, and demographic information. The survey took approximately 20 minutes to complete. The invitation included the message that ten teachers would be randomly selected to receive an Amazon gift card of \$50. Once the survey closed, ten participants were randomly selected and sent a gift card.

Measures of Resources

From the literature on teacher well-being and the results of findings in Study One, eight resources were identified for measurement in Study Two. The following resources represent all four of the original JD-R categories and the additional category of institutional resources.

Self-efficacy. Tschannen-Moran and Hoy's (2001) Teacher Self-Efficacy scale was the measurement tool for this category. Klassen et al. (2009) reported the Cronbach's alpha coefficients for the scale ranged from .71 to .94. Researchers have investigated the scale to measure teacher self-efficacy in various settings and have concluded that it has adequate validity and reliability (e.g., Klassen et al., 2009; Wolters & Daugherty, 2007). The 12-item scale includes three subdomains: (1) efficacy for instructional strategies (e.g., "To what extent can you use a variety of assessment strategies?"), (2) efficacy for classroom management (e.g., "How much can you do to control disruptive behavior in the classroom?"), and (3) efficacy for student engagement (e.g., "How much can you do to help your students value learning?"). Teachers responded to each item using a Likert-type scale from 1 (nothing) to 9 (a great deal).

Optimism. Optimism was measured using five Life Orientation Test-Revised (LOT-R) items. The LOT-R has good reliability and validity ($\alpha = .78$; Scheier et al., 1994). This scale measures optimism with statements such as, "In uncertain times, I usually expect the best." Participants were asked to rate the extent to which they agreed with each item using a Likert-type scale from 1 (strongly disagree) to 5 (strongly agree). Two of the items are negatively worded items and were reverse scored.

Social Support. Skaalvik and Skaalvik's methods (2011) were adopted to measure overall social support with two subscales: *colleague support* and *supervisory support*. Colleague support was measured via three items (e.g., "In educational matters, I can always get good help from my colleagues"). Cronbach's alpha was .84 for this three-item scale (Skaalvik & Skaalvik,

2011). Supervisory support was also measured with three items (e.g., “In educational matters, I can always get help and advice from the school leadership”). The Cronbach's alpha for this three-item scale is .86 (Skaalvik & Skaalvik, 2011). For both three-item scales, teachers were asked to indicate the extent to which they agreed with the items by choosing an option from a Likert-type scale from 1 (strongly disagree) to 5 (strongly agree).

School Culture. Three items from Skaalvik and Skaalvik’s (2018) tool were adopted to measure school culture. These items focused on *common goals, values, and practices* (e.g., “The teachers and the school administration at this school have a common understanding of the direction in which the school should be developed”). Cronbach's alpha for the scale was .78. For these items, teachers indicated the extent to which they agreed with the items by choosing an option from 1 (strongly disagree) to 5 (strongly agree) on a Likert-type scale.

Safety. The Workplace Safety Climate Survey (Prairie Research Associates, 2015) was adapted to fit teachers’ workplaces and used to measure the degree to which teachers feel safe at school. Items such as “The safety of teachers and students is a high priority for my school” and “Formal drills are regularly done to see if teachers are following safety plans” seek to measure this construct. Cronbach's alpha for the original scale is very high (.94). For these items, teachers were asked to indicate the extent to which they agreed with the items by choosing an option on a Likert-type scale from 1 (strongly disagree) to 5 (strongly agree).

Instructional Resources. To measure whether teachers feel like they have the materials needed to do their job, teachers were asked questions from a subscale from the Working Conditions Survey (Ladd, 2011). This scale has good consistency when used in teacher populations (Johnson, 2006; Ladd, 2011) and includes a subscale that measures *facilities and resources*. Two items measure resources and were selected to be used in the current study (e.g.,

“I have sufficient access to appropriate instructional materials and resources”). For these items, teachers indicated the extent to which they agreed with the items by choosing an option from a Likert-type scale from 1 (strongly disagree) to 5 (strongly agree).

Political Support. The Political Attitudes subscale (Jorgensen et al., 2010) was adapted to measure the degree to which teachers believe political structures support them and their students. The original scale includes seven items: three items that ask about attitudes towards local officials and four items that ask about attitudes towards government officials. Cronbach's alpha for the original subscale was good (.83-.90). From these items, six were adapted to measure political support attitudes of teachers regarding support for educators and students (e.g., “My local government does a good job advancing the interests of educators” and “The federal government does a good job advancing the interests of students”). For these items, teachers were asked to indicate the extent to which they agreed with the items by choosing an option from a Likert-type scale from 1 (strongly disagree) to 5 (strongly agree).

Diversity Climate. To measure teachers' perception of the diversity climate in their school, four items developed by McKay et al. (2011) were modified slightly and presented to participants. These items were created to measure the equal and fair treatment of employees, leadership support for diversity, and recognition of diverse perspectives. These items have good internal consistency ($\alpha = .82$; McKay et al., 2011). For items measuring this construct (e.g., “My school maintains a diversity-friendly work environment” and “The administration demonstrates a visible commitment to diversity”), teachers indicated the extent to which they agreed with the items by choosing an option from a Likert-type scale from 1 (strongly disagree) to 5 (strongly agree).

Measures of Teacher Well-Being

Teachers were also asked to complete questionnaires on their *job satisfaction*, *work engagement*, *work stress*, and *burnout* to measure factors of teacher well-being.

Job Satisfaction. One item, “Taking everything into consideration, how do you feel about your job as a whole?” was used to measure job satisfaction. Teachers answered this question on a Likert-type scale from 1 (extremely dissatisfied) to 7 (extremely satisfied). This approach is recommended by Dolbier et al. (2005), who reported that the psychometric properties of the single-item overall job satisfaction measure are strong.

Burnout. A 16 item-scale, the Oldenburg Burnout Inventory, was used to measure this concept. The two subscales, *disengagement* and *exhaustion*, have reported Cronbach's alpha coefficients ranges of .73 and .83, respectively (Demerouti et al., 2003). This measure has been used in samples of teachers to measure teacher burnout (e.g., Baka, 2015; Timms et al., 2007). For this study, three items were selected with the highest factor loadings to measure disengagement, which refers to distancing oneself from their work and is measured with items such as, “I always find new and interesting aspects in my work” and “I feel more and more engaged in my work.” Three of the eight items with the highest factor loadings were selected to measure exhaustion, which refers to the consequences of strain from work (physical, affective, and cognitive) and captured through items such as, “After my work, I usually feel worn out and weary” and “After work, I tend to need more time than in the past in order to relax and feel better.” Teachers were asked to indicate the extent to which they agreed with the items by choosing an option on a Likert-type scale from 1 (strongly disagree) to 5 (strongly agree).

Work Engagement. The Utrecht Work Engagement Scale (UWES; Schaufeli et al., 2006) has 17 items and three subscales: *vigor*, *dedication*, and *absorption*. Schaufeli et al. (2006) report that Cronbach's alpha coefficients range from .85-.92. This measure needed no adaptations

as it has been used as written in various samples of teachers to measure teacher work engagement (e.g., Skaalvik & Skaalvik, 2014; Shimazu et al., 2008; Yi-wen & Yi-qun, 2005). Six items measure vigor, but only the two items with the highest factor loadings were used for this study. Vigor refers to high energy levels and mental resilience during work and is measured with items such as “At my work, I feel that I am bursting with energy.” The two items with the highest factor loadings were selected to measure dedication and absorption. Dedication refers to finding a sense of significance and enthusiasm at work and is measured with items such as, “My job inspires me” while *absorption* refers to the feeling that time is passing fast when one is at work—being immersed in work—and is measured with items such as, “I am immersed in my work.” For all three subscales, teachers were asked to indicate how often they have this feeling (if ever) by choosing an answer on a Likert-type scale from 1 (never) to 7 (always/every day).

Work Stress. The concept of *work stress* was measured using one item, “I find my teaching job to be very stressful,” that researchers have determined is reliable and valid (Eddy et al., 2019). Teachers responded to this item on a Likert-type scale from 1 (strongly disagree) to 7 (strongly agree). This approach has been commonly used in studies on teacher stress (e.g., Klassen & Chiu, 2011; Klassen et al., 2010; Chaplain, 2008).

Demographic Information

After responding to questions about well-being, teachers were asked a series of questions about their demographics. These questions included where they teach (e.g., school location and type), what they teach, how long they have been teaching, and an estimated percentage of students at their school who receive free or reduced lunch. They also responded to personal demographic information such as education level, race/ethnicity, age, and gender identity.

Analysis

First, the reliability of each measure was assessed to check the factor structure (see Table 3.1 for alpha levels and descriptive statistics). Next, a composite score for both positive (engagement and satisfaction) and negative (stress and burnout) teacher well-being was created. Then, the correlations among the study variables (resources and well-being outcomes) were examined to assess the strength and direction of the existing associations. These correlations were used to test the hypothesis that resources would be positively related to positive measures of well-being and negatively related to negative measures of well-being and assess the extent that resources are related to these measures of well-being.

Next, the variance of the demographic variables across resources and teacher well-being was examined to answer the question of how resources and well-being may vary across demographic variables. To examine differences in resources and well-being in terms of the type of school, location of the school, grade level position, student socioeconomic status (percentage of students that qualify for free/reduced lunch), race/ethnicity, years of experience, and gender, MANOVAs were run to identify mean differences. Years of experience and the percentage of students that qualified for free/reduced lunch were collected as continuous variables and were transformed into common categories: categories of experience (novice: 1-5; intermediate: 6-10; and, experiences: 11+ years; Goldring et al., 2013; Renzulli et al., 2011) and categories of students on that qualify for free/reduced lunch (low:0-33%; middle: 33.01-66%; and high: 66.01-100%). For the MANOVA to assess race/ethnicity, the Native Hawaiian or Other Pacific Islander participant was removed, given that there was only one participant who selected this category. After examining specific MANOVA results, group differences were examined using subsequent ANOVAs and Tukey's post hoc tests.

Next, to assess the unique contribution of different resources in predicting teacher well-being, two separate multiple regressions were run with positive and negative teacher well-being as the outcome variables. All resources were entered simultaneously. All study analyses were conducted using SPSS and, unless otherwise noted, determined significant when $p < .05$. Lastly, due to strong correlations, multicollinearity was assessed. There were no issues determined by multicollinearity.

Results

The Relationship between Resource and Well-being

The correlations among the study variables (resources and well-being outcomes) were examined to assess the strength and direction of the existing associations. The hypothesis was supported such that all resources had positive correlations with positive well-being and had negative correlations with negative well-being (for all correlations, $p < .001$; see Table 3.2). Increases in resources for teachers were associated with increases in positive well-being and decreases in negative well-being. Additionally, all resource variables showed significant negative correlations with burnout and stress separately, and all resource variables showed significant positive correlations with work engagement and job satisfaction separately (see Table 3.2). Thus, resources showed significant relations with positive well-being and negative well-being compositely, and the factors of well-being separately.

For positive well-being, the resources that demonstrated the strongest positive relationships included social support ($r = .41, p < .001$), diversity climate ($r = .39, p < .001$), and self-efficacy ($r = .35, p < .001$). For negative well-being, the resources that demonstrated the strongest negative relationships included, optimism ($r = -.32, p < .001$), social support ($r = -.28, p < .001$), and safety ($r = -.27, p < .001$).

Resources and Well-being across Demographic Variables

The variation of resources and teacher well-being among demographic variables was examined to answer the question of how resources and well-being may vary across teacher and school demographics. To examine differences in resources and well-being in terms of the type of school, school location, grade level position, student socioeconomic status (percentage of students that qualify for free/reduced lunch), race/ethnicity, experience, and gender, MANOVAs and subsequent ANOVAs and post hoc tests were run to identify mean differences. A Bonferroni correction was used in the follow up ANOVAs to control for Type I error ($0.5/11 = .045$; $p < .045$ was used to determine significance). Means and standard deviations based on the demographic group are reported below (See figures 3.1-3.10 for demographic differences by each well-being and resource measure).

School Type

A MANOVA test revealed a significant effect of school type on resources and teacher well-being, *Wilks' Λ* = .96, $F(2, 1919) = 3.54$, $p < .001$, partial $\eta^2 = .02$. A combination of reported teacher well-being and resources therefore differs significantly based on school type. A series of one-way ANOVA's on each of the dependent variables was conducted as a follow-up test to the MANOVA. These ANOVA's revealed a significant difference of self-efficacy, $F(2, 1919) = 3.24$, $p < .045$, social support, $F(2, 1919) = 3.12$, $p < .045$, instructional resources, $F(2, 1919) = 12.51$, $p < .001$, school culture, $F(2, 1919) = 5.65$, $p < .01$, political support, $F(2, 1919) = 3.74$, $p < .045$, diversity climate, $F(2, 1919) = 5.52$, $p < .045$, and negative well-being $F(2, 1919) = 12.13$, $p < .001$, by school type.

A series of post-hoc analyses (Tukey) were performed to examine the individual mean difference comparisons across the three different types of schools and the significant ANOVAs.

In terms of negative well-being, private school teachers demonstrated lower levels of negative well-being ($M = 8.87, SD = 2.01$) than both public school teachers ($M = 9.61, SD = 1.74, p < .01$) and charter school teachers ($M = 9.60, SD = 1.73, p < .001$). Private school teachers reported greater perceived political support ($M = 2.14, SD = .60$) when compared to charter school teachers ($M = 1.94, SD = .56, p < .01$), and greater access to instructional resources ($M = 4.01, SD = .83$) when compared to public school teachers ($M = 3.73, SD = .91, p < .01$). Charter school teachers ($M = 3.77, SD = .88$) reported higher school culture scores when compared to public school teachers ($M = 3.30, SD = .91, p < .045$). Lastly, charter school teachers ($M = 3.63, SD = .79$) reported greater diversity climate ratings when compared to public school teachers ($M = 3.42, SD = .87, p < .01$). While self-efficacy and social support MANOVA results demonstrated a significant difference by school type, no individual differences met the threshold of significance.

School Location

A MANOVA test revealed a significant effect of school locations on resources and teacher well-being, $Wilks' \Lambda = .88, F(2, 1922) = 7.56, p < .001, \text{partial } \eta^2 = .04$. A combination of reported teacher well-being and resources therefore differs significantly based on school location. A series of one-way ANOVA's on each of the 11 dependent variables was conducted as a follow-up test to the MANOVA. These ANOVA's revealed a significant difference of diversity climate, $F(2, 1922) = 15.40, p < .01$, political support, $F(2, 1922) = 10.64, p < .001$, instructional resources, $F(2, 1922) = 50.26, p < .001$, safety, $F(2, 1922) = 17.44, p < .001$, and social support, $F(2, 1922) = 3.10, p < .045$, by school location.

A series of post-hoc analyses (Tukey) were performed to examine the individual mean difference comparisons across the three different types of schools and the significant ANOVAs.

Rural teachers reported lower scores of diversity climate ($M = 3.18, SD = .91$) than both urban/city teachers ($M = 3.56, SD = .84, p < .001$) and suburban teachers ($M = 3.47, SD = .85, p < .001$). Urban/city teachers reported lower perceived political support ($M = 1.91, SD = .63$) when compared to rural teachers ($M = 2.07, SD = .70, p < .01$) and suburban teachers ($M = 2.09, SD = .66, p < .001$). Urban/city teachers reported fewer instructional resources ($M = 3.55, SD = .97$) when compared to suburban teachers ($M = 3.91, SD = .85, p < .001$) and rural teachers ($M = 3.77, SD = .85, p < .01$); urban/city teachers also reported lower perceived safety ($M = 3.56, SD = .79$) in comparison to suburban teachers ($M = 3.76, SD = 0.69, p < .001$). While the social support MANOVA results demonstrated a significant difference by school location, no individual differences met the threshold of significance.

Student Socioeconomic Status

A MANOVA test revealed a significant effect of student socioeconomic status (as operationalized by percentage of students on free or reduced lunch [FRD]) on resources and teacher well-being, $Wilks' \Lambda = .90, F(2, 1920) = 8.87, p < .001, \text{partial } \eta^2 = .05$. A combination of reported teacher well-being and resources differ significantly based on categories of students' socioeconomic status. A series of one-way ANOVA's on each of the 11 dependent variables was conducted as a follow-up test to the MANOVA. These ANOVA's revealed a significant difference of positive well-being, $F(2, 1920) = 7.06, p < .01$, negative well-being, $F(2, 1920) = 11.08, p < .001$, instructional resources, $F(2, 1920) = 105.44, p < .001$, school culture, $F(2, 1920) = 3.56, p < .045$, safety, $F(2, 1920) = 8.41, p < .001$, political support, $F(2, 1920) = 10.83, p < .001$, and social support $F(2, 1920) = 9.35, p < .001$, by student socioeconomic status.

A series of post-hoc analyses (Tukey) were performed to examine the individual mean difference comparisons across the three categories of students that qualify for free and reduced

lunch (low, middle, and high) and the significant ANOVAs. Teachers who taught in a school with a high percentage of students on free or reduced lunch reported lower positive well-being ($M = 11.04, SD = 1.7$) when compared to the low percentage group ($M = 11.29, SD = 1.58, p < .01$), and greater negative well-being ($M = 9.74, SD = 1.73$) when compared to teachers in the low percentage group ($M = 9.23, SD = 1.84, p < .001$). Teachers in the high percentage group also reported less perceived political support ($M = 1.95, SD = .67$) when compared to the low percentage group ($M = 2.12, SD = .63, p < .001$), and lower perceived safety ($M = 3.62, SD = .78$) when compared to the low percentage group ($M = 3.78, SD = .69, p < .001$). Teachers in the high percentage group reported fewer instructional resources ($M = 3.53, SD = .095$) when compared to the low percentage group ($M = 4.10, SD = 0.75, p < .001$) and middle percentage group ($M = 3.82, SD = 0.84, p < .001$); moreover, the difference between teachers in the middle and low group was also significant ($p < .001$), such that teacher in the low percentage group reported fewer instructional resources and the middle percentage group. Lastly, teachers who taught in a school with a high percentage of students on free or reduced lunch reported less social support ($M = 3.60, SD = .82$) when compared to the low percentage group ($M = 3.79, SD = .74, p < .045$), and lower school culture scores ($M = 3.28, SD = .93$) when compared to teachers in the low percentage group ($M = 3.41, SD = .90, p < .001$).

Grade Level Position

A MANOVA test revealed a significant effect of grade level position on resources and teacher well-being, $Wilks' \Lambda = .95, F(2, 1922) = 4.50, p < .001, \text{partial } \eta^2 = .02$. A combination of reported teacher well-being and resources therefore differs significantly based on grade level position. A series of one-way ANOVA's on each of the 11 dependent variables was conducted as a follow-up test to the MANOVA. These ANOVA's revealed a significant difference of negative

well-being, $F(2, 1922) = 5.44, p < .01$, diversity climate, $F(2, 1922) = 9.66, p < .001$, safety, $F(2, 1922) = 10.75, p < .001$, school culture, $F(2, 1922) = 19.41, p < .001$, social support $F(2, 1922) = 4.33, p < .045$, self-efficacy $F(2, 1922) = 10.36, p < .001$, and optimism, $F(2, 1922) = 6.28, p < .01$, by grade level position (Elementary: PreK-5th grade; Middle: 6th-8th grade; and High School: 9th-12th grade).

A series of post-hoc analyses (Tukey) were performed to examine the individual mean difference comparisons across the three categories of grade level positions and the significant ANOVAs. First, middle school teachers reported lower negative well-being ($M = 9.32, SD = 1.93$) than elementary ($M = 9.61, SD = 1.71, p < .045$) and high school teachers ($M = 9.68, SD = 1.75, p < .01$). In terms of the resources, there were several significant differences by grade level. High school teachers reported lower diversity climate scores ($M = 3.28, SD = .93$) than both elementary ($M = 3.50, SD = .84, p < .001$) and middle school teachers ($M = 3.45, SD = .87, p < .045$). Elementary school teachers reported greater perceived safety ($M = 3.73, SD = 0.73$) than high school teachers ($M = 3.53, SD = 0.75, p < .001$), and middle school teachers also reported greater perceived safety ($M = 3.69, SD = 0.73$) than high school teachers, $p < .001$. Elementary school teachers reported greater school culture scores ($M = 3.43, SD = .89$) than middle school teachers ($M = 3.31, SD = .91, p < .045$) and high school teachers ($M = 3.10, SD = .95, p < .001$). The difference between middle school and high school teachers was also significant, $p < .01$. Elementary school teachers reported greater social support ($M = 3.71, SD = .78$) than high school teachers ($M = 3.57, SD = .85, p < .045$). Elementary school teachers reported greater self-efficacy ($M = 4.08, SD = .78$) than middle school teachers ($M = 3.99, SD = .80, p < .01$) and high school teachers ($M = 3.98, SD = .85, p < .001$). Lastly, middle school reported higher optimism

levels ($M = 3.61$, $SD = .59$) than elementary school teachers ($M = 3.52$, $SD = .61$, $p < .045$) and high school teachers ($M = 3.47$, $SD = .66$, $p < .01$).

Years of Experience

A MANOVA test revealed a significant effect of years of experience on resources and teacher well-being, $Wilks' \Lambda = .94$, $F(2, 1923) = 5.48$, $p < .001$, partial $\eta^2 = .03$. A combination of reported teacher well-being and resources therefore differs significantly based on years of experience (Novice: 1-5 years; Intermediate: 6-10 years; and Veteran: 11+ years). Age was controlled for in this analysis. A series of one-way ANOVA's on each of the 11 dependent variables was conducted as a follow-up test to the MANOVA. These ANOVA's revealed a significant difference of negative well-being, $F(2, 1923) = 7.14$, $p < .01$, political support, $F(2, 1923) = 4.81$, $p < .01$, instructional resources, $F(2, 1923) = 6.47$, $p < .01$, self-efficacy, $F(2, 1923) = 18.39$, $p < .001$, $p < .01$, and optimism $F(2, 1923) = 9.21$, $p < .001$.

A series of post-hoc analyses (Tukey) were performed to examine the individual mean difference comparisons across the three categories of experience and the significant ANOVAs. In terms of well-being, novice teachers ($M = 9.66$, $SD = 1.77$) and intermediate teachers ($M = 9.63$, $SD = 1.73$) showed greater negative well-being than veteran teachers ($M = 9.55$, $SD = 1.84$, $p < .01$; $p < .01$). In terms of resources, there were several differences based on experience groups. Veteran teachers ($M = 2.10$, $SD = .68$) reported greater perceived political support than both novice teachers ($M = 2.00$, $SD = .64$, $p < .045$) and intermediate teachers ($M = 2.00$, $SD = .65$, $p < .01$). Veteran teachers ($M = 3.87$, $SD = 0.90$) reported more access to instructional resources when compared to novice teachers ($M = 3.67$, $SD = 0.92$, $p < .01$). Veteran ($M = 4.10$, $SD = .43$) and intermediate ($M = 4.05$, $SD = .44$) teachers reported higher self-efficacy than novice teachers ($M = 3.94$, $SD = .45$, $p < .001$; $p < .001$). Lastly, veteran ($M = 3.63$, $SD = .62$)

teachers reported higher optimism level than both novice ($M = 3.46, SD = .63, p < .045$) and intermediate ($M = 3.52, SD = .58, p < .045$) teachers.

Race/Ethnicity

A MANOVA test revealed no significant effect of race/ethnicity on resources and teacher well-being, $Wilks' \Lambda = .98, F(5, 1920) = 1.29, p > .05, \text{partial } \eta^2 = .01$. Categories of race/ethnicity in the current study do not significantly differ across reported teacher well-being and resources.

Gender

A MANOVA test revealed no significant effect of gender on resources and teacher well-being, $Wilks' \Lambda = .98, F(2, 1921) = 1.48, p > .05, \text{partial } \eta^2 = .008$. Categories of gender identity in the current study do not significantly differ across reported teacher well-being and resources.

The Relative Contribution of Resource in Predicting Well-being

Overall, all resources were predictors of both positive and negative well-being on their own. However, one of the study's goals was to investigate the unique contribution that the resources had in predicting positive and negative well-being. There were no apriori hypotheses in examining the resources' unique contributions on well-being. Multiple regressions were used to predict positive and negative well-being from the eight resource variables entered simultaneously (see Table 3.3). To detect the potential for multicollinearity among the independent variables, a diagnostic check based on the assessment of variance inflation factors (VIF) was performed (James et al., 2013). The results suggested that multicollinearity was not a concern. In both analyses, demographic variables (years of teaching experience, school type and location, grade level, % of students on free/reduced lunch, age, gender, and race) were controlled for.

The model for resources predicting negative well-being was significant, $F(16, 1902) = 33.78, p < .001, R^2 = .19$. When entered simultaneously, an increase in optimism $b = -.59, SE = .06, p < .001$, self-efficacy, $b = -.61, SE = .09, p < .001$, social support, $b = -.14, SE = .07, p < .05$, instructional resources, $b = -.10, SE = .05, p < .05$, and political support, $b = -.30, SE = .06, p < .001$ predicted a decrease in negative well-being. When entered simultaneously, safety, school culture, and diversity climate were not associated with a significant decrease in negative well-being.

The model for resources predicting positive well-being was significant, $F(16, 1902) = 62.32, p < .001, R^2 = .31$. When entered simultaneously, an increase in optimism, $b = .43, SE = .04, p < .001$, self-efficacy, $b = .94, SE = .08, p < .001$, social support, $b = .36, SE = .06, p < .001$, instructional resources, $b = .17, SE = .04, p < .001$, political support, $b = .12, SE = .05, p < .05$, and diversity climate, $b = .30, SE = .05, p < .001$, predicted an increase in positive well-being. When entered simultaneously, school culture and safety were not associated with a significant increase in positive well-being.

Discussion

Although research has investigated teacher well-being using the JD-R model, few studies have examined the contribution of these resources and demographic differences in the reported resources. The current study investigated the extent to which psychological, social, physical, organizational, and instructional resources related to measures of positive and negative teacher well-being and the relative contribution of these resources. Additionally, the current study investigated demographic differences in resources and well-being.

Based on the JD-R model and past findings in the literature of teacher well-being, it was hypothesized that resources would be positively associated with positive well-being and

negatively associated with negative well-being. Results supported this hypothesis such that increases in resources were associated with increases in positive well-being and decreases in negative well-being. These relations confirm the associations found in previous studies on teacher well-being focused on optimism, self-efficacy, social support, school culture, and instructional resources with teacher well-being (e.g., Cansoy, 2018; Chiou, 2016; Cameron & Lovett, 2014; Gu & Day, 2007; Howard & Johnson, 2004; Johnson et al., 2014; Korb & Akintunde, 2013; Tait, 2008). These relations also confirm the associations found in previous studies on workplace well-being focused on safety, political support, and diversity climate among populations other than teachers (e.g., Chen et al., 2012, 2017; McKay et al., 2007, 201; Probst, 2002; Probst & Brubaker, 2001; Yang & Pandey, 2017). However, the current study supports these associations amongst teachers. Importantly, this provides confirmatory evidence for findings in Study One, that safety, political support, and diversity climate are important resources for teachers. These significant associations between resources and well-being measures have important theoretical implications.

First, they confirm that institutional resources (e.g., political support and diversity climate) may play a role in teacher well-being. As a discussed addition to the JD-R model in Study One, this study confirms these relations and suggests that these resources are relevant in understanding, studying, and improving teacher well-being. Practical implications of the novel associations of these resources include improving diversity climate in schools and advocating for political support for teachers. For example, Diversity, Equity, and Inclusion efforts in schools may have a direct impact on teacher well-being. Additionally, community groups that advocate on behalf of teacher needs in political arenas may also have this positive effect. Moreover, resources had different degrees of strength in association with positive and negative well-being.

For example, diversity climate had a stronger relationship with positive well-being than it did with negative well-being. Diversity climate was a significant predictor of positive well-being but not of negative well-being. Further, a diversity climate had a stronger relationship with job satisfaction than it did with work engagement. This provides support for the study of both positive and negative factors of well-being—and the addition of different components for each. The JD-R model uses work engagement as the primary positive factor of well-being, but a model of employee well-being that also includes job satisfaction may be a more comprehensive approach in studying well-being for teachers.

Next, the uniqueness of these resources in predicting measures of well-being was assessed exploratorily. Results confirmed that certain resources were stronger predictors of positive well-being and negative well-being. For positive well-being, in order of strongest to weakest: self-efficacy, social support, optimism, diversity climate, instructional resources, and political support were all significant predictors. School culture and safety were not significant predictors. For negative well-being, in order of strongest to weakest: optimism, self-efficacy, political support, social support, school culture, and instructional resources were all significant predictors. Safety and diversity climate were not significant predictors. These results also provide further support for the study of positive and negative components of well-being. For example, improving school culture may be more important for decreasing stress and burnout than for increasing job satisfaction and engagement. Approaching these resources to target different features of well-being could bolster teacher well-being overall. Safety and diversity climate did show relationships with well-being factors for teachers so they should still be considered and measured as resources in studies that replicate these findings. This research showed that they were not significant predictors, however different models or future studies could yield different

results given the significant correlations. For example, safety may be more of an important factor in schools where safety is more of a threat.

Currently, many school interventions that aim to improve teacher well-being focus on one factor or resource. While this type of study is done as such to study the individual effects without confounding variables, future studies could include groups that receive more than one intervention to see if the combined effect of resources has a compounding positive impact on teacher well-being. For example, a school intervention focusing on improving social support or increasing access to instructional resources might increase positive well-being but not decrease teacher stress. A similar intervention could also work on improving the school culture or advocate for political support to decrease negative well-being.

Lastly, while some demographic characteristics did not show any significant variance (race/ethnicity and gender), other characteristics varied (e.g., school type, years of experience, and the percentage of students on free or reduced lunch). In terms of socioeconomic status of students and school location, the results confirmed that teachers with a higher percentage of students receiving free or reduced lunch exhibited greater negative well-being and lower positive well-being. These findings are consistent with previous findings in the literature (e.g., Allensworth et al., 2009, Marinell & Coca, 2013). However, contradictory to past research, the results did not show a difference in the well-being of teachers by location, while past research has shown that Urban/City school teachers exhibit greater stress than suburban teachers (Simon & Johnson, 2015). Teachers with a high percentage of students receiving free or reduced lunch did report less instructional resources, social support, political support, less perceived safety, and lower school culture, and this may explain the reason for their lower positive and higher negative well-being. This also confirms past research that teachers in lower socioeconomic status schools

leave due to poor working conditions, relationships with their colleagues, and school culture (Goldring et al., 2013). Though this study did not show differences in positive well-being by school type, which contradicts past research that suggests that charter school teachers are more satisfied than public school teachers (Renzulli et al., 2001), charter school teachers and public school teachers did have higher rates of negative well-being when compared to Private school teachers. Private school teachers demonstrated the highest access to instructional resources and political support, which might account for these differences in well-being. Moreover, results show that charter schools had the highest diversity climate and school culture. It might be of interest to understand if these patterns repeat in future studies, and if so, what these schools do differently (beyond funding alone) to foster these resources.

In terms of experience level, results showed that novice teachers experienced the highest negative well-being, which confirms other studies that find that this group of teachers experiences greater stress and burnout (e.g., Lau et al., 2005; Anotniou et al., 2006). Novice teachers reported less optimism, self-efficacy, access to instructional resources, and political support than experienced teachers. Even still, they displayed the greatest levels of negative well-being. These results confirm findings related to self-efficacy (Tschannen-Moran & Hoy, 2007) and suggest that training that bolsters self-efficacy may be beneficial for novice teachers. Few studies have examined well-being differences between grade levels. However, the current results confirm evidence that high school teachers show higher negative well-being when compared to elementary school teachers (Black, 2001). High school teachers reported less social support, lower school culture, lower perceived safety, and lower diversity climate, which might account for their higher negative well-being. Future studies could investigate these resource differences and what high schools could do to increase school culture to improve teacher well-being. Finally,

while past research has been mixed on the topic (e.g., Bottiani et al., 2019; Lua et al., 2005), no race/ethnicity or gender differences were identified within the designs of this study. However, several demographic differences merit attention for both researchers and interventionists. These differences can direct those interested in improving teacher well-being towards a starting point (e.g., focusing on novice teacher self-efficacy).

Limitations

Though the current study showed many important results amongst a diverse and large subset of teachers, it was not without limitation. First, all analyses are correlations, and no variables were manipulated. Thus, there can be no causal interpretations, such that it cannot be confirmed from this research that any of the resources cause increases or decreases in well-being. Future research can measure teacher resources across time to assess causality. Moreover, the list of resources in this study was not all-encompassing. There are several resources that were not measured (e.g., *autonomy, school building resources*). As more resources are identified in the literature, future work can measure these different resources to identify their unique importance to teacher well-being. Next, though the internet provides an opportunity for a large sample size, collecting data from one social media platform could limit the representativeness of teachers given that the participants all share unique commonalities such as Instagram users, or followers of the same Instagram accounts.

The context of the pandemic should not be ignored when interpreting the results of this date. It is important to note that teacher well-being was largely affected by the sudden switch to remote learning. A study on the working conditions of the pandemic found that teachers reported challenges related to engaging students in remote learning (e.g., student internet access, struggle to motivate students virtually, and increased inequities for students) and managing their

responsibilities at school and home (Kraft, Simon, & Lyon, 2020; Reich et al., 2020). Moreover, the level of impact that resources may have on well-being could be exacerbated due to this context. For example, a survey of pre- and post-data found that emergency changes had a large negative impact on teachers' self-efficacy—but teachers who reported satisfaction with their school and district leadership were least likely to experience declines of self-efficacy (Kraft et al., 2020; Pressley & Ha, 2021). In the current study, there was a positive relationship between support and self-efficacy. A portion of this relationship could be explained by the high-stakes teaching environment. Though this is one example, all the results of this survey should be interpreted through this context and this research should be repeated to confirm patterns of findings in post-pandemic teaching. Additionally, the data was collected at the beginning stages of pandemic before teachers had experienced a full academic year with adjustments. Research done in later stages of the pandemic may yield different results.

Finally, the analyses of the demographic differences were exploratory and should be interpreted as such. Although the significant differences that were found are confirmed in the literature, the findings that differ from literature or are novel should be interpreted with caution. These results need to be confirmed through other samples, and future work can continue to measure and assess these demographic differences.

Conclusion

This study extends the literature of teacher well-being by confirming novel resource associations with teacher well-being outcomes, assessing the unique contribution of these resources, and analyzing demographic differences among resource and well-being outcomes. This study has important practical and theoretical contributions for teacher well-being and JD-R model research as it establishes a preliminary confirmation between institutional resource needs

and well-being outcomes. Theories that address teacher well-being, and even JD-R model research of employee well-being, might consider adding, measuring, and discussing institutional resources. Moreover, this study addresses a large gap in the literature by assessing the unique prediction of several resources. The results have implications for which resources are most important in addressing positive and negative teacher well-being. Lastly, this study provides strong evidence for the importance of studying both positive and negative factors of well-being as they have a range of associations with resource needs. The current study assesses the relation between resource needs and well-being, highlights important resource needs that could have the biggest impact on teacher well-being, and provides a range of demographic differences amongst well-being and these resource needs.

Table 3.1*Descriptives of Study Variables*

Variables	<i>alpha</i>	<i>M</i>	<i>SD</i>
Positive Well-Being		11.03	1.69
Work Engagement	.83	5.54	.77
Job Satisfaction		5.49	1.15
Negative Well-Being		9.55	1.78
Burnout	.76	2.77	.61
Work Stress		5.68	1.20
Optimism	.74	3.53	.62
Self-Efficacy	.85	4.04	.44
Social Support	.87	3.68	.80
School Culture	.83	3.33	.92
Safety	.85	7.27	1.16
Instructional Resources	.77	7.45	1.36
Political Support	.87	2.02	.66
Diversity Climate	.84	3.44	.87

Table 3.2*Correlations of Study Variables*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Positive Well-Being	—													
2. Work Engagement	.82	—												
3. Job Satisfaction	.92	.54	—											
4. Negative Well-Being	-.46	-.35	-.45	—										
5. Burnout	-.61	-.49	-.57	.81	—									
6. Work Stress	-.25	-.16	-.26	.91	.49	—								
7. Optimism	.32	.28	.29	-.32	-.34	-.23	—							
8. Self-Efficacy	.35	.41	.25	-.24	-.32	-.13	.22	—						
9. Social Support	.41	.26	.43	-.28	-.33	-.18	.28	.18	—					
10. School Culture	.32	.21	.33	-.25	-.27	-.17	.21	.16	.68	—				
11. Safety	.31	.22	.31	-.27	-.26	-.15	.21	.24	.50	.47	—			
12. Instructional Resources	.30	.21	.30	-.23	-.24	-.17	.20	.17	.38	.31	.38	—		
13. Political Support	.21	.08	.25	-.23	-.20	-.19	.19	.04 ^a	.26	.28	.26	.30	—	
14. Diversity Climate	.39	.25	.42	-.25	-.30	-.16	.26	.18	.66	.58	.47	.31	.29	—

$p < .001$ for all correlations

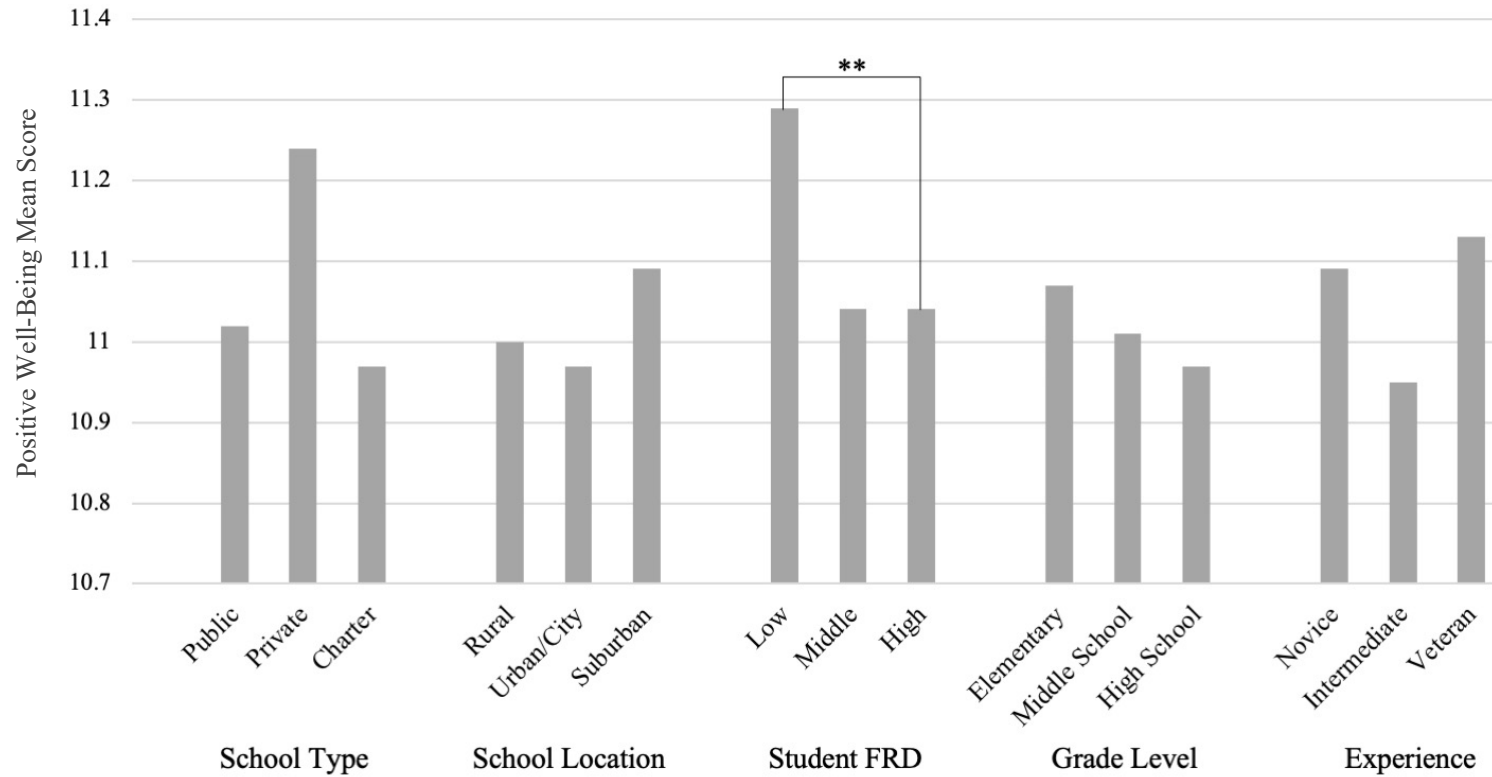
Table 3.3*Multiple Regressions Predicting Negative and Positive Teacher Well-Being*

Variable	Negative Well-Being			Positive Well-Being		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Optimism	-.59	.06	-.21***	.43	.06	.16***
Self-Efficacy	-.61	.09	-.15***	.94	.08	.25***
Social Support	-.14	.07	-.07*	.36	.06	.17***
School Culture	-.10	.06	-.05*	.00	.05	.00
Safety	-.04	.02	-.02	.03	.05	.01
Instructional Resources	-.10	.05	-.05*	.17	.04	.09***
Political Support	-.30	.06	-.11***	.12	.05	.05*
Diversity Climate	-.10	.06	-.05	.30	.05	.15***
<i>R</i> ²		.19			.31	
<i>F</i>		33.78***			62.32***	

p* < .05, *p* < .01, ****p* < .001

Figure 3.1

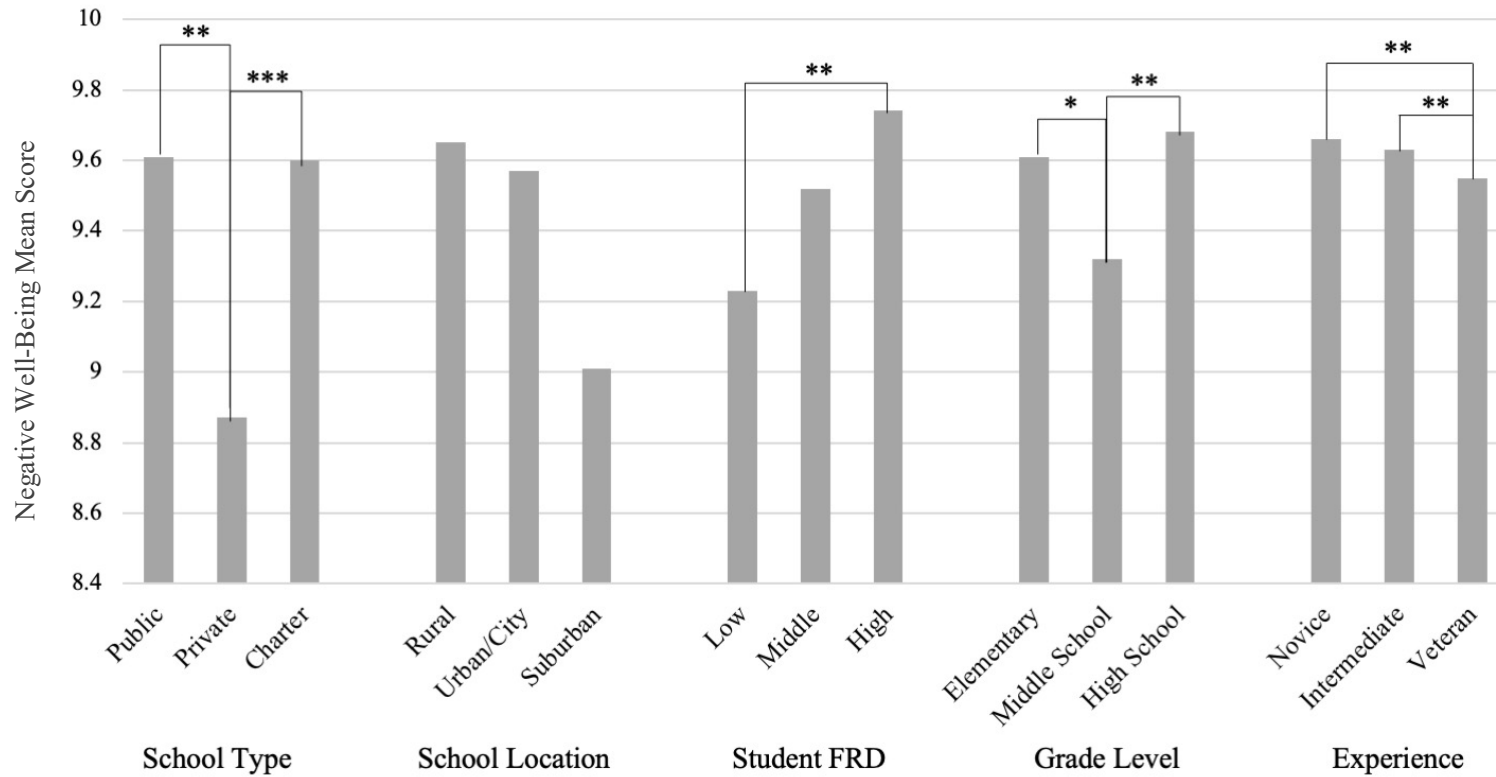
Demographic Differences by Positive Well-Being



* $p < .045$, ** $p < .01$, *** $p < .001$

Figure 3.2

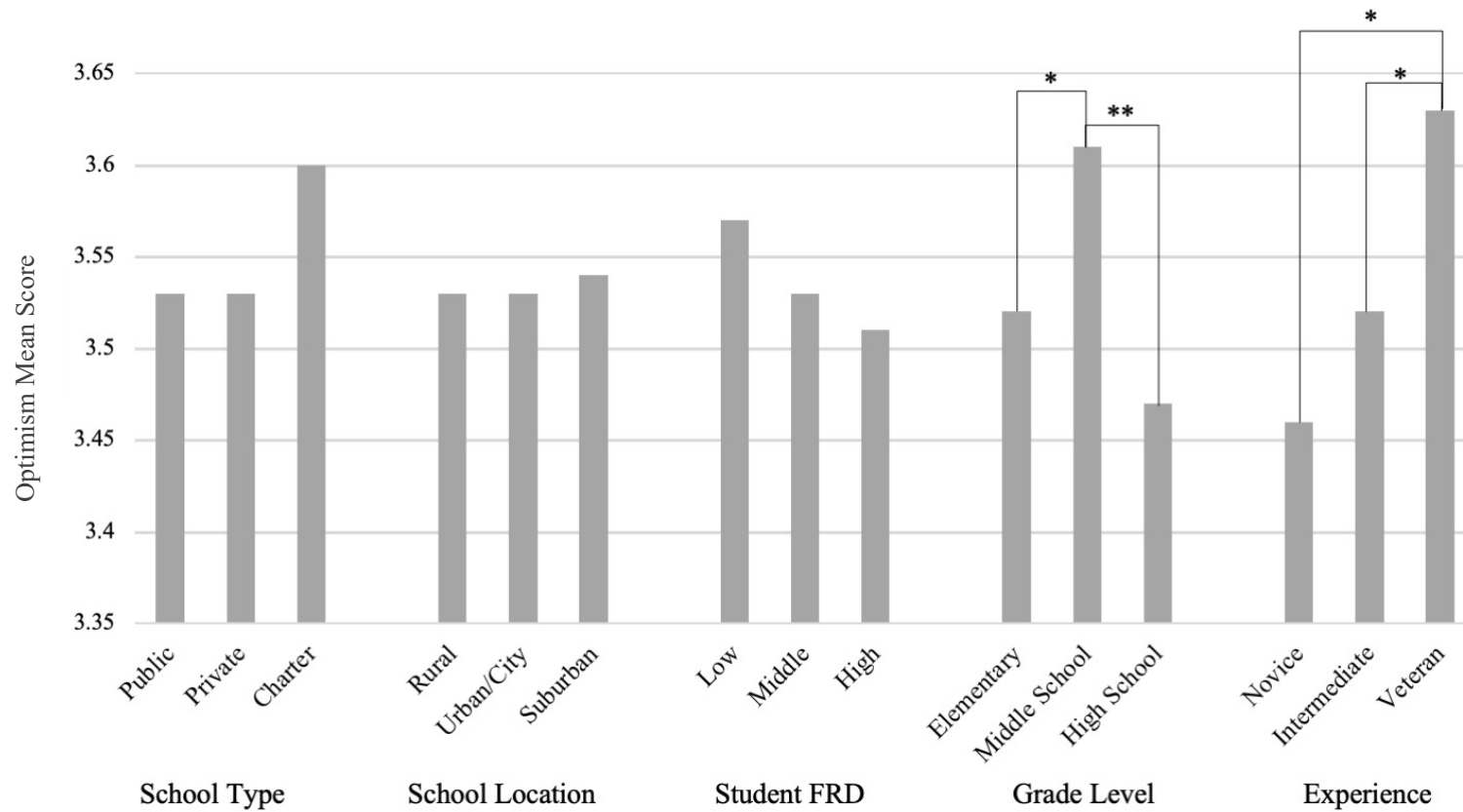
Demographic Differences by Negative Well-Being



* $p < .045$, ** $p < .01$, *** $p < .001$

Figure 3.3

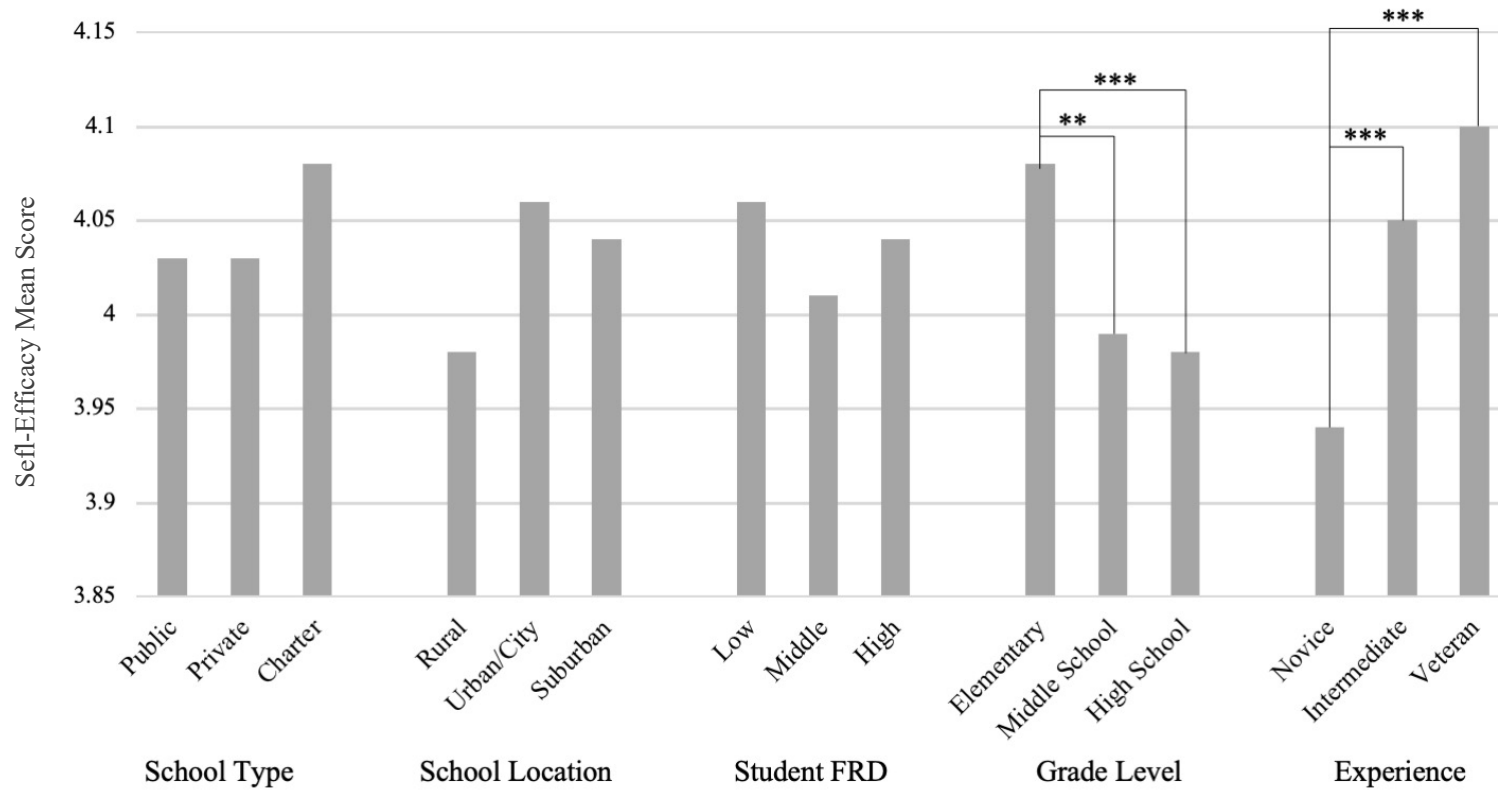
Demographic Differences by Optimism



* $p < .045$, ** $p < .01$, *** $p < .001$

Figure 3.4

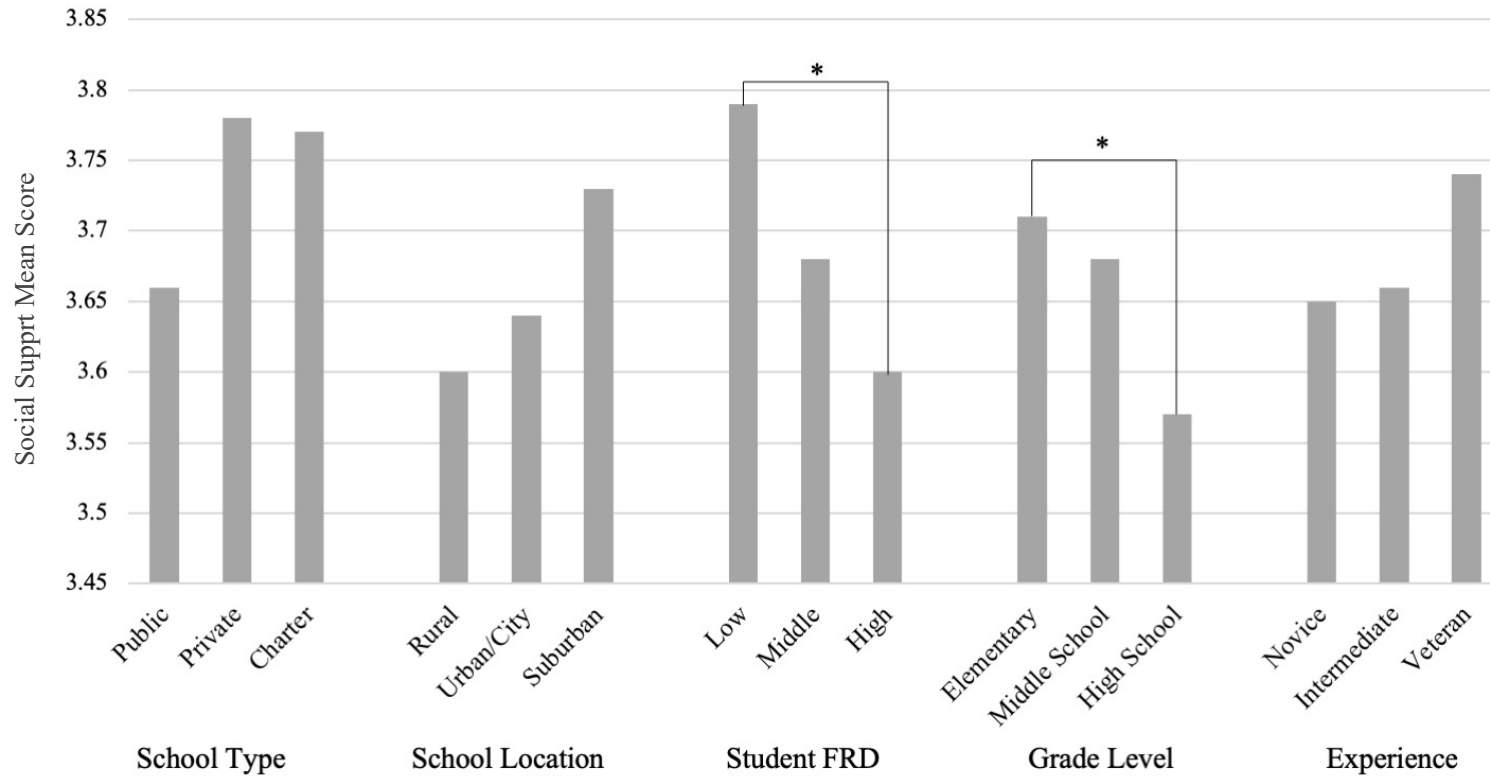
Demographic Differences by Self-Efficacy



* $p < .045$, ** $p < .01$, *** $p < .001$

Figure 3.5

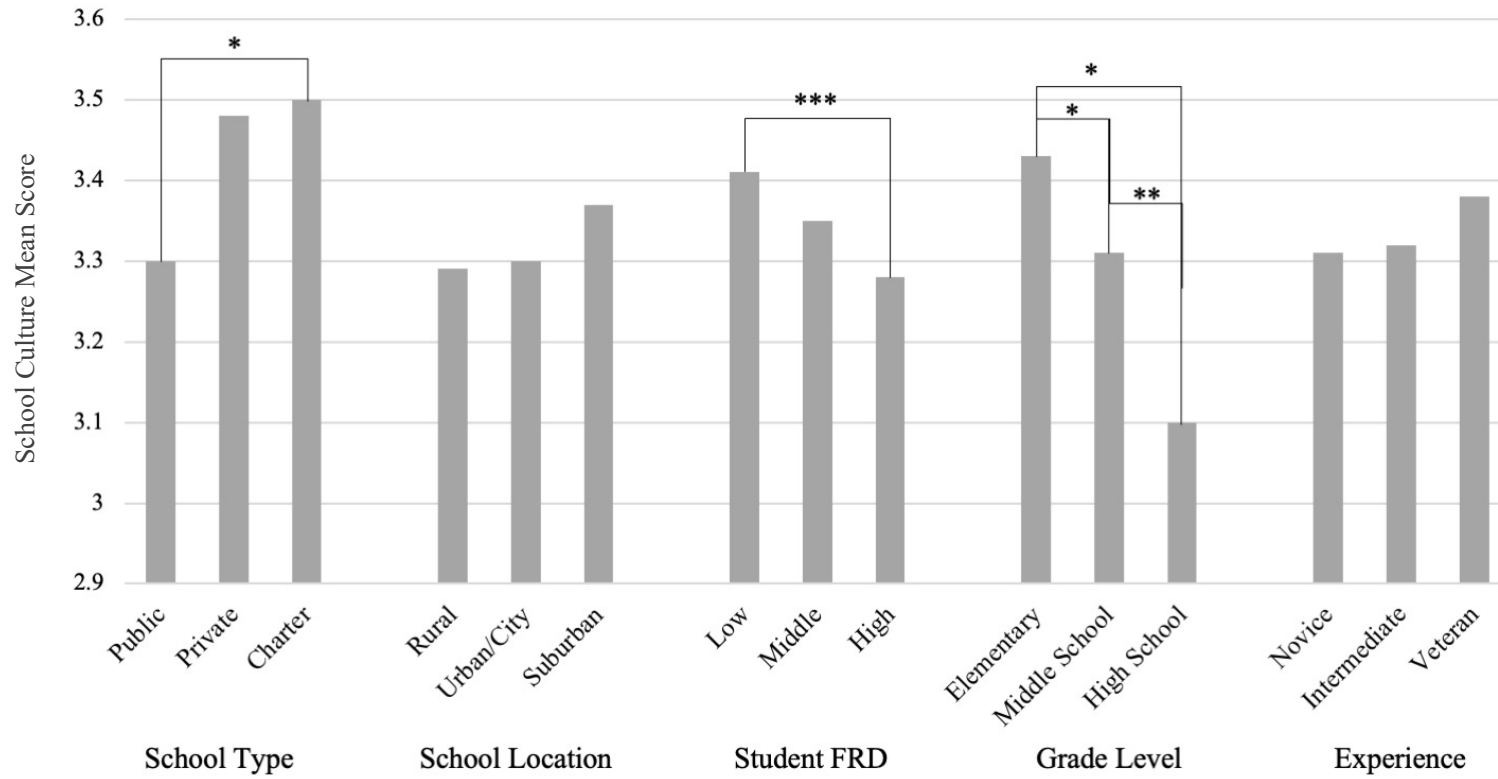
Demographic Differences by Social Support



* $p < .045$, ** $p < .01$, *** $p < .001$

Figure 3.6

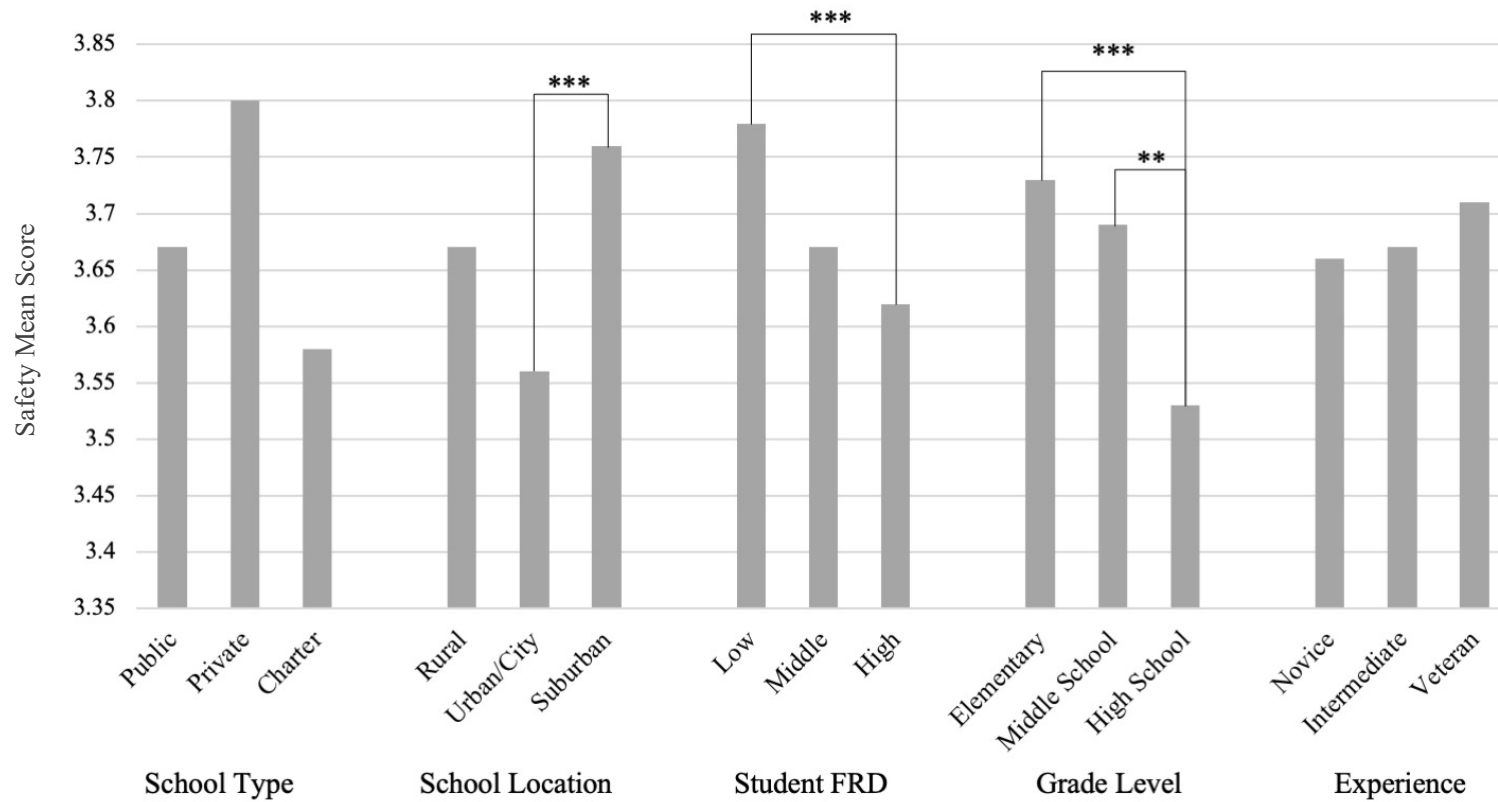
Demographic Differences by School Culture



* $p < .045$, ** $p < .01$, *** $p < .001$

Figure 3.7

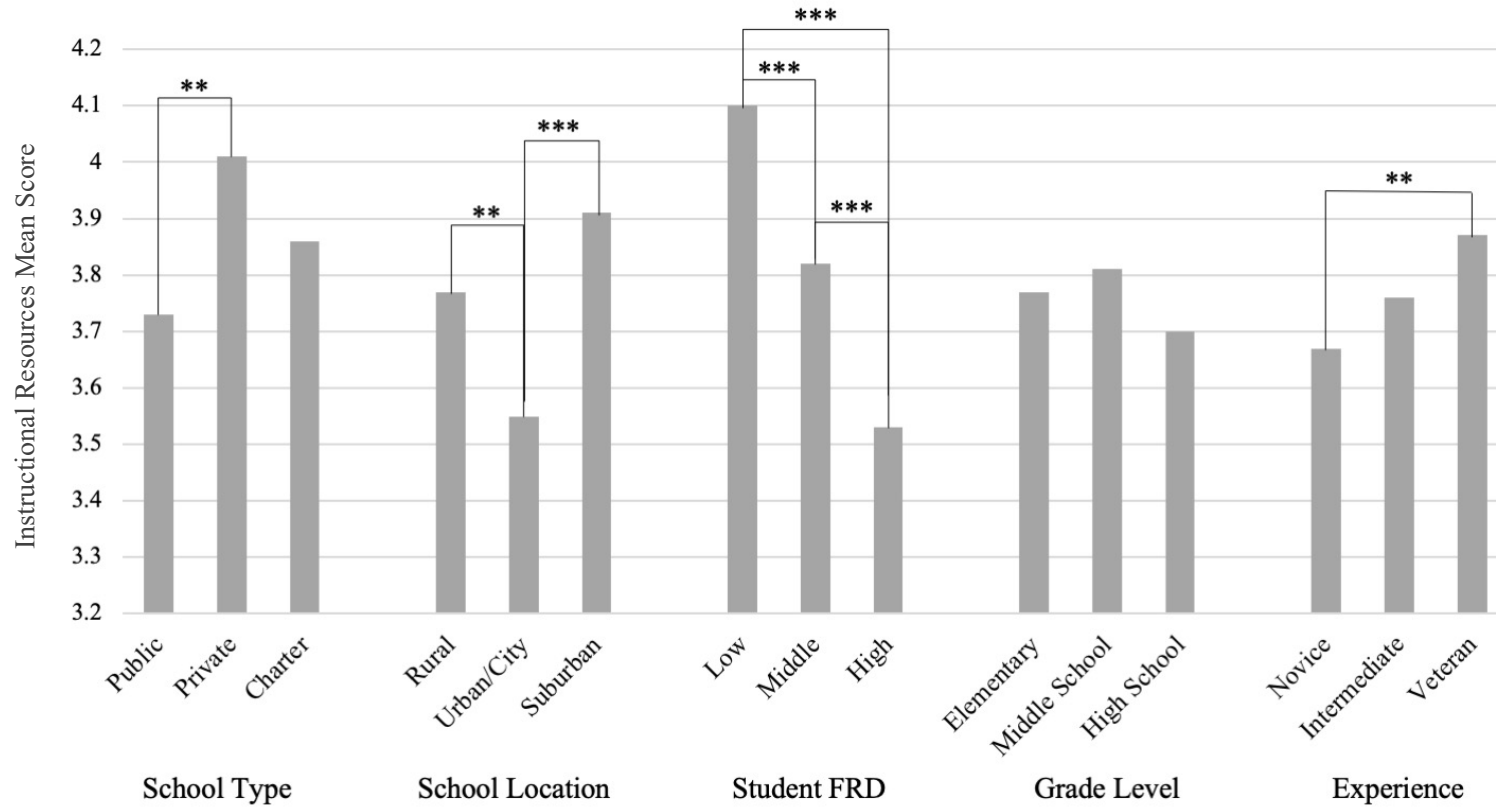
Demographic Differences by Safety



* $p < .045$, ** $p < .01$, *** $p < .001$

Figure 3.8

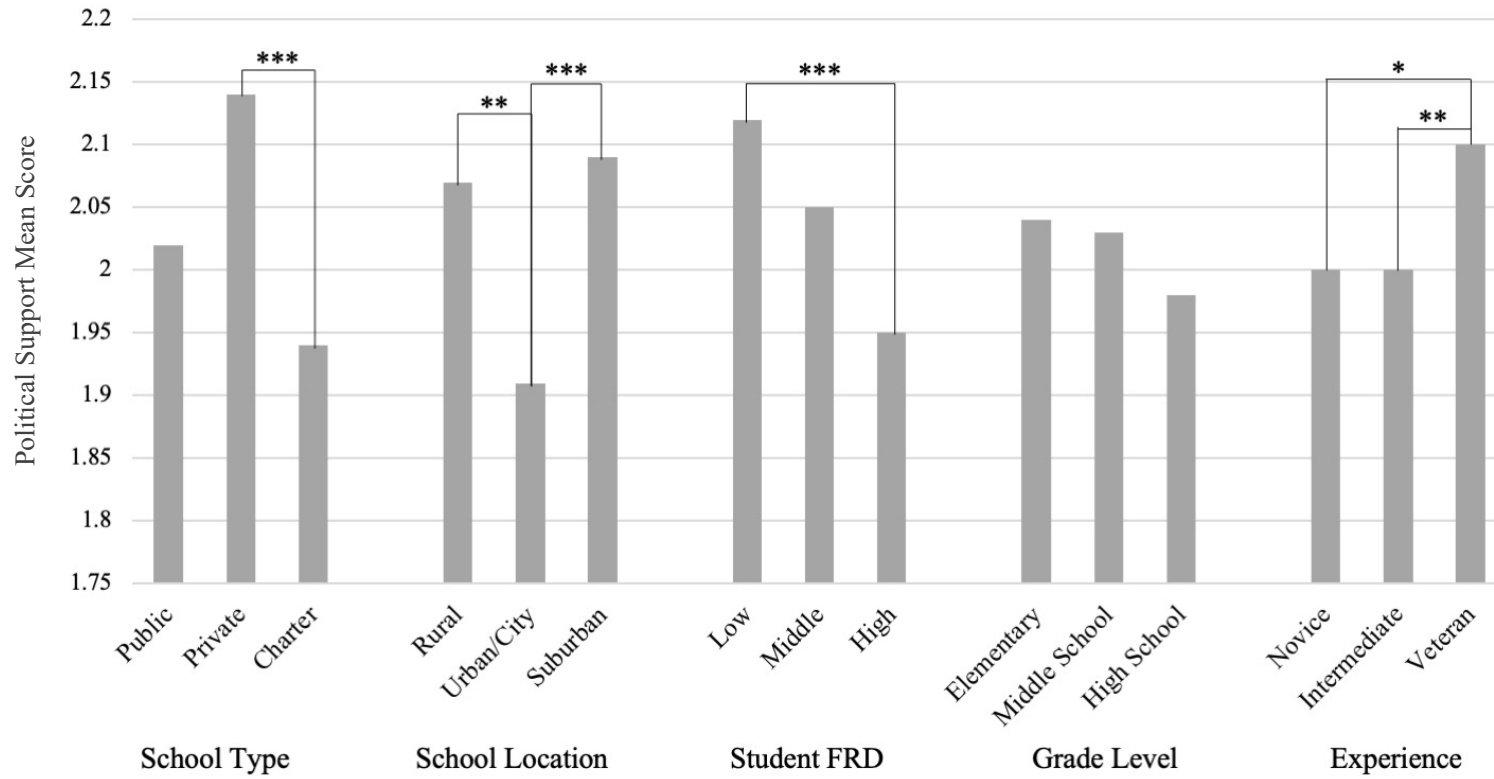
Demographic Differences by Instructional Resources



* $p < .045$, ** $p < .01$, *** $p < .001$

Figure 3.9

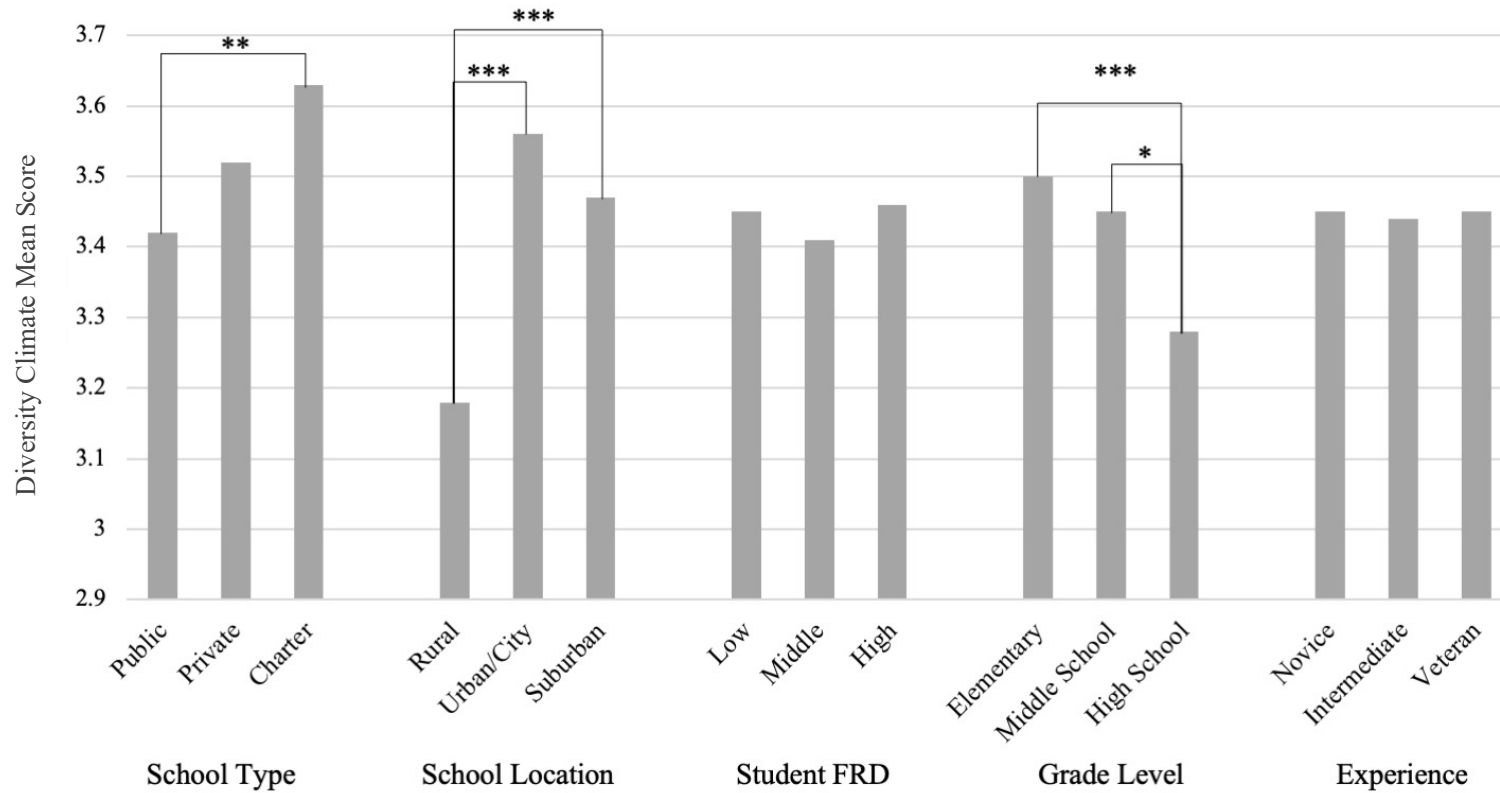
Demographic Differences by Political Support



* $p < .045$, ** $p < .01$, *** $p < .001$

Figure 3.10

Demographic Differences by Diversity Climate



* $p < .045$, ** $p < .01$, *** $p < .001$

Chapter 4 General Discussion

This dissertation aimed to examine the barriers and facilitators of teacher well-being. Across two studies, I found various teacher-reported resource needs and examined the varying impacts that these resources have on teacher well-being outcomes. Overall, this research addressed six research questions:

1. What resources do teachers report they need in the workplace?
2. Which resource needs are most often mentioned by teachers?
3. Do resource needs differ across regions of the United States?
4. To what extent are psychological (optimism and self-efficacy), social (social support), physical (instructional resources and safety), organizational (school culture), and institutional resources (political support and diversity climate) related to measures of positive and negative teacher well-being?
5. How do resources and well-being differ across demographic and contextual variables (e.g., type of school, teaching position, years of experience)?
6. What is the relative contribution of different resources in predicting teacher well-being?

Many of these research questions were exploratory and investigated the resources that teachers report and the degree to which these resources impact well-being. Based on the JD-R theory and previous research on teacher well-being, I also hypothesized that resources would be positively associated with work engagement and job satisfaction and negatively associated with burnout and stress.

In Chapter Two (Study One), I presented research from a Twitter study of teachers across all 50 United States. I used the hashtag #ArmMeWith and the Jobs-Demands Resources (JD-R) model to conduct a thematic analysis of the teacher-reported resource needs. This study explored resource needs and investigated both overall and regional frequencies. Teachers addressed all resource themes proposed in the JD-R model, but the code-level findings provide important insights into what resource themes contemporary U.S. teachers find important. The findings highlight some resource themes that have been recognized in teacher well-being literature but not addressed in studies on teacher well-being that build on the JD-R theory (e.g., physical resources). In addition, a new resource theme, institutional resource needs, not previously mentioned in the JD-R literature, was established. This new theme contributes to the well-being literature by capturing teachers' needs within political and social systems. The frequency analysis revealed the importance of physical and organizational resources to teachers, which were reported most often. Moreover, no differences between frequencies of resource need themes by region were found.

In Chapter III (Study Two), I used survey methodology to explore the relationship between resource needs and teacher well-being outcomes. First, I investigated resource needs that are identified in the literature, including new resource needs discovered in Study One with positive and negative measures of teacher well-being using a survey given to a diverse sample of teachers. This study investigated the extent to which psychological, social, physical, organizational, and instructional resources related to positive and negative well-being measures and the relative contribution of these resources. Additionally, this study investigated demographic differences in resources and well-being. Based on the JD-R model and past findings in the literature of teacher well-being, I hypothesized that resources would be positively

associated with positive well-being constructs and negatively associated with negative well-being constructs. Results supported this hypothesis. This provides confirmatory evidence for findings in Study One that safety, political support, and diversity climate are resources that have relationships with teacher well-being. Moreover, resources had different degrees of strength in association with positive and negative well-being (e.g., diversity climate had a stronger relationship with positive well-being than negative well-being). This affirms the benefits of studying both positive and negative factors of well-being. Next, the uniqueness of these resources in predicting measures of well-being was assessed exploratorily. Results confirmed that certain resources were stronger predictors of well-being measures. Lastly, the demographic differences among teacher well-being and resources were examined. While some demographic characteristics did not show any significant variance (race/ethnicity and gender), other characteristics showed significant differences (e.g., novice teachers reported less optimism, self-efficacy, access to instructional resources, and political support than experienced teachers).

Implications

There are several implications to the findings of this dissertation. First, the results provide theoretical contributions to the research on teacher well-being, the Job Demands-Resource model of workplace well-being, and several practical implications for teachers, administrators, and those researching teachers in school settings.

Theoretical Implications

The results of this dissertation bring up theoretical questions and suggestions for extensions of both the JD-R theory and the study of teacher well-being. The first study provides extensions to the JD-R theory, and the second study confirms these suggested changes and

discusses how teacher well-being is theorized. These suggestions can inform other researchers who study workplace well-being, particularly in the context of teachers.

Study One established essential extensions to the JD-R theory. While many of the resources needs fit into the original JD-R categories, two did not. The institutional resources needs category was created to better explain the social change and political change resource needs mentioned by teachers. Notably, Study Two confirmed the association between these resources and teacher well-being. Both political support and diversity climate were positively correlated with work engagement and job satisfaction and were negatively correlated with burnout and work stress. Further, diversity climate predicted positive well-being, such that positive changes in diversity climate were associated with increases in positive teacher well-being and political support predicted negative well-being, such that decreases in political support were associated with increases in negative teacher well-being. These provide preliminary evidence for the support of studying institutional resource needs among teachers when examining their well-being. As mentioned previously, Johnson and Down (2013) call for the study of how the political landscape impacts teachers. These studies support this suggestion and call for the study of the situational context of teacher well-being—including more factors of institutional resources.

Study Two provided evidence for studying both positive and negative factors of teacher well-being. In this dissertation, teacher well-being was conceptualized as job resources and demands contributing to work engagement, job satisfaction, stress, and burnout (see Figure 1). The outcomes of the study confirmed this model's design. First, the different resource needs measured had varying relationships with the well-being outcomes. For example, self-efficacy was more strongly associated with work engagement than job satisfaction, and social support

was more strongly associated with burnout than it was work stress. This provides evidence that both positive and negative well-being measures are associated with resource needs, and that even within these categories, the different constructs used to measure well-being may vary across resource needs. These findings have implications for the study of operationalizing teacher well-being. For example, not all resources predicted well-being in both categories. For example, increases in diversity climate predicted positive well-being but did not predict decreases in negative well-being. If this study had only measured negative well-being, a part of the picture would have likely been missed. Future work should measure both positive and negative outcomes of well-being and investigate the significance of each of these components.

It is important to note that there have been critiques of the JD-R theory. For example, some academics call future researchers to better understand and analyze the moderating and mediating factors in the framework and to further examine the model in different cultural settings (Kwon & Kim, 2020). The current work addresses the cultural setting critique by examining the relationships of job resources and well-being outcomes among different social contexts. Future work can continue to examine, advance, and refine this theory.

Practical Implications

Practical implications from this dissertation center on novel resources that should be considered in teacher well-being as well as highlighting the importance of specific resources. In Study One, most resource need requests were physical resource needs. As others have previously discussed (Education Service Advisory Committee, 1998), materials emerged as the most mentioned resource need. In Study Two, I explored the role of instructional resources in teacher well-being. Findings suggest that instructional resources related to teacher well-being were predictive of both negative and positive attributes of well-being. While the demographic

difference in instructional materials yielded significant results, with teachers at urban/city and low-income student population schools reporting the least access to instructional resources, it is important to highlight that the theme *most* identified in Study One is the resource least accessible to underserved school populations. This supports previous findings that teachers in these areas experience the most burnout, which is an important social issue for the students they serve (Kyriacou, 2001). Teachers need access to basic materials. Moreover, students in low socioeconomic communities have the least access to these resources. Therefore, efforts to give teachers access to instructional material should start with the teachers in these schools. These findings highlight the issue of teacher funding and provide evidence for the importance of getting American teachers access to the materials they need.

The need for safety is an example of a novel finding from Study One. The need for physical safety has previously not been identified as a physical resource in the JD-R theory and is missing from the literature on teacher well-being. It emerged as a theme in Study One because teachers are clearly considering their safety in schools. Workplace well-being was on their mind when they responded to the Twitter hashtag. I took a closer look at safety in Study Two and found a positive correlation with work engagement and job satisfaction and a negative correlation with burnout and work stress. Even though safety was not a strong predictor of well-being, these findings provide preliminary evidence that safety needs are at the very least related to workplace well-being and should be considered in studies that look at schools as teachers' workplaces. If this resource continues to show a correlation with well-being, administrators could focus on ways to increase teacher safety—such as training, support for legislation that increases teacher safety, and asking teachers about their feeling of safety at school.

The third most frequently mentioned resource category in Study One was social resources. This category has been previously highlighted in the teacher well-being literature (e.g., Ju et al., 2015; Olsen & Anderson, 2007) and JD-R literature (e.g., Anderson & Olsen, 2006; Hakanen et al., 2006). Social support is negatively associated with teacher burnout and positively associated with teacher retention (Ju et al., 2015; Olsen & Anderson, 2007). Study Two replicated this burnout association finding and found that social support is also positively associated with work engagement and job satisfaction. In terms of demographic difference, elementary teachers experience significantly more social support than high school teachers. These findings emphasize the importance of social support in the workplace. Administrators may consider strengthening coworker relationships in schools and providing time for teachers to connect with colleagues in meaningful ways. Moreover, future work may investigate the higher ratings of social support amongst elementary school teachers and how this culture could be promoted amongst high school teachers, given the positive benefits for well-being. Research can seek to understand what administration in elementary schools are doing and how these efforts can be replicated in high school settings.

Chan (2009) states that few studies investigate the role of personal strengths concerning teacher well-being. In the context of these studies, self-efficacy and optimism may be considered significant personal strengths and psychological resources (Ahmed, 2012; Gliebe, 2013). Study One identified psychological resources and Study Two measured two of them, optimism and self-efficacy, establishing significant associations with teacher well-being. Most interestingly, optimism and self-efficacy were respectively the two strongest predictors of both negative and positive well-being. This provides solid evidence that psychological resources play a meaningful role in well-being. Researchers might consider the weight these resources have on teacher well-

being and how they can be further measured and tested. Additionally, intervention to address building psychological resources may be a valuable tool for teacher professional development and of interest to school administrators.

Finally, there are implications for education policy that stem from the frequency analyses in Study One and the demographic analyses in Study Two. First, the reported resources did not vary across the United States, and thus these resource needs should be considered at the national level. In terms of positive well-being, there was only one significant demographic difference. Teachers who worked at schools with a small population of students who qualify for free and reduced lunch had significantly higher positive well-being than teachers who worked at schools with a high population of students eligible for free and reduced lunch. The same is true for negative well-being, with teachers who worked at schools with a low population of students eligible for free and reduced lunch having significantly lower negative well-being than teachers who worked at schools with a high population of students who qualify for free and reduced lunch. In terms of resource needs, teachers who worked in schools with a higher population of students who qualify for free and reduced lunch reported lower social support, fewer feelings of safety, less access to resources, and less political support. This supports previous work that finds that teachers in these populations experience more work stress and burnout (Bottiani, 2019; Goldring et al., 2013). Though not a surprising finding, and as states previously, this amplifies the urgency for national support of underfunded and historically marginalized student populations.

Limitations and Future Research

Though the current dissertation identified many critical resource needs and further confirmed the importance of these resources for teacher well-being, several limitations should be

considered when interpreting this work. As previously mentioned, Twitter data needs to be carefully handled as it provides a vast amount of information but has its limits. For example, teachers who use Twitter may have different viewpoints than those who are not on Twitter. One suggestion made in Study One was to confirm social media findings in other samples. Study Two partially accomplished this goal by establishing conclusions from Study One amongst a new sample. However, it should be noted that social media was again used to recruit participants in Study Two. Thus, there may still be voices missing in the findings. In particular, the majority of teacher who completed the survey were 25-34 years old. This could be due to the nature of the population that use social media, but it also could reflect the attrition level of teachers. This research should be replicated with other sampling methods to see if the results are similar.

Further, there were no experimental manipulations made in any of the studies in this dissertation. Therefore, the findings are correlational and exploratory. Future work can examine resource intervention and the effectiveness of these interventions to test which resources are most significant in contributing to teacher well-being. Moreover, Study Two examines a few resources in each resource category, and future studies could explore other mentioned resources from Study One and their relationship with teacher well-being. Together, these studies provide insights on resources and teacher well-being and call for further exploration of these relationships.

Conclusions

This dissertation extends the literature of teacher well-being by identifying resource needs and confirming existing and novel resource needs and their association with teacher well-being outcomes. The exploratory Twitter study (Study One) identified a range of teacher resource needs using social media data to examine what resources teachers need to increase their

well-being at work. Novel resource needs uncovered by this dissertation (e.g., safety needs and physical space needs) provide new resources to consider in measuring and advocating for teacher well-being. This work also made important theoretical and methodological contributions to teacher well-being. Institutional resource needs were identified and may be considered in future work using the JD-R theory categories. Other areas of work might consider institutional resource needs in employee well-being. Theories, research, and interventions that address teacher well-being should consider incorporating these novel resource needs and the institutional resource needs category.

In addition, Study Two extends the literature on teacher well-being by confirming some of these novel resource needs with teacher well-being outcomes and examines the unique contribution of these resources. Although there are limitations to Study One regarding measurements of teacher well-being, Study Two was able to establish the associations of resource needs from each category—including the new category of institutional needs—with teacher burnout, stress, engagement, and satisfaction. This study confirms the potential contribution of institutional resources needs for the JD-R model. Due to varying associations with positive and negative well-being outcomes and resource needs, this study's results have implications for supporting measuring both negative and positive factors in considering workplace well-being.

Together, these studies advance our knowledge of teacher well-being. They work together to provide new information from social media data descriptively and confirm this information with planned survey methodology. Study One brought up a range of resource needs, and Study Two confirmed the association of examples of these resource needs in measures of teacher well-being. This suggests that a range of resource needs should be considered in

understanding teacher well-being. Notably, various avenues could implement interventions to increase teacher well-being, decrease burnout and job stress, and promote workplace engagement and job satisfaction. Additionally, in examining the demographic factors of both studies, there are similar needs for teachers across the United States and grade levels. These studies support the idea that teacher well-being is considered at the national policy level. The well-being of teachers is of utmost importance for our future generation of leaders and our current and future teachers. To promote their well-being, administrators, policymakers, and those making essential decisions in education should consider their most crucial resource needs to address well-being issues.

References

- Abel, M. H., & Sewell, J. (1999). Stress and burnout in rural and urban secondary school teacher. *Journal of Educational Research, 92*(5), 23-35.
<https://doi.org/10.1080/00220679909597608>
- Abdallah, S., Harrison, E., Quick, A., Saini, R., & Zwiener, N. (2016). *Roundtable briefing: Governance, wellbeing and the perceived quality of society*. City University of London.
https://neweconomics.org/uploads/files/fc94e62ed20ce76dae_spm6b1pto.pdf
- Ahmed, M. A. (2012). The role of self-esteem and optimism in job satisfaction among teachers of private universities in Bangladesh. *Asian Business Review, 1*(1), 114-120.
<https://doi.org/10.18034/abr.v1i2.322>
- Aldrup, K., Klusmann, U., & Ludtke, O. (2017) Does basic need satisfaction mediate the link between stress exposure and well-being? A diary study among beginning teachers, *Learning and Instruction, 50*, 21-30. <https://doi.org/10.1016/j.learninstruc.2016.11.005>
- Allensworth, E., Ponisciak, S., & Mazzeo, C. (2009). *The schools teachers leave: Teacher mobility in Chicago public schools*. Chicago, IL: Consortium on Chicago School Research at the University of Chicago.
- Anderson, M. B., & E. F. Iwanicki. (1984). Teacher motivation and its relationship to burnout. *Educational Administration Quarterly, 20*, 94–132.
- Anderson, L., & Olsen, B. (2006). Investigating early career urban teachers' perspectives on and experiences in professional development. *Journal of Teacher Education, 57*(4), 359-377.
<https://doi.org/10.1177/0022487106291565>

- Antoniou, A.S., Polychroni, F., & Vlachakis, A.N. (2006). Gender and age differences in occupational stress and professional burnout between primary and high-school teachers in Greece. *Journal of Managerial Psychology*, 21(7), 682–690.
<https://doi.org/10.1108/02683940610690213>
- Atkins, M., Graczyk, P., Frazier, S., & Adil, J. A. (2003). Toward a new model for school-based mental health: Accessible, effective, and sustainable services in urban communities. *School Psychology Review*, 12, 503-514.
<https://doi.org/10.1080/02796015.2003.12086214>
- Avanzi, L., Miglioretti, M., Velasco, V., Balducci, C., Vecchio, L., Fraccaroli, F., & Skaalvik, E. (2013) Cross-validation of the Norwegian Teacher's self-efficacy scale (NTSES). *Teaching and Teacher Education*, 31, 69-78. <https://doi.org/10.1016/j.tate.2013.01.002>
- Bacon, J. (2018, February 22). *Trump plan at odds with teacher #ArmMeWith movement*. USA Today. <https://www.usatoday.com/story/news/nation/2018/02/22/trump-plan-odds-teacher-armmewith-movement/362294002/>
- Baka, Ł. (2015). Does job burnout mediate negative effects of job demands on mental and physical health in a group of teachers? Testing the energetic process of Job Demands-Resources model. *International Journal of Occupational Medicine and Environmental Health*, 28(2), 335-346. <https://doi.org/10.13075/ijomeh.1896.00246>
- Bakker, A. B. (2005). Flow among music teachers and their students: The crossover of peak experiences. *Journal of Vocational Behavior*, 66, 26-44.
<https://doi.org/10.1016/j.jvb.2003.11.001>

- Bakker, A. B., Albrecht, S. L., & Leiter, M. P. (2011). Key questions regarding work engagement. *European Journal of Work and Organizational Psychology, 20*, 4-28.
<https://doi.org/10.1080/1359432X.2010.485352>
- Bakker, A.B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology, 22*, 309-328.
<https://doi.org/10.1108/02683940710733115>
- Bakker, A. B., & Demerouti, E. (2014). Job Demands-Resources theory. In C. L. Cooper (Ed.), *Wellbeing* (pp. 1-28). John Wiley & Sons, Ltd.
- Bakker, A. B., & Demerouti, E. (2017). Job Demands-Resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology, 22*(3), 273-285.
<https://doi.org/10.1037/ocp0000056>
- Bakker, A. B., & Demerouti, E. (2018). Multiple levels in Job Demands-Resources theory: Implications for employee well-being and performance. In E. Diener, S. Oishi, & L. Tay (Eds.), *Handbook of wellbeing*. DEF Publishers.
- Bakker, A.B., Hakanen, J.J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology, 99*(2), 274-284. <https://doi.org/10.1037/0022-0663.99.2.274>
- Bakker, A.B., van Veldhoven, M., & Xanthopoulou, D. (2010). Beyond the demand-control model: Thriving on high job demands and resources. *Journal of Personnel Psychology, 9*(1), 3-16. <https://doi.org/10.1027/1866-5888/a000006>
- Bakker, A.B., & Schaufeli. (2000). Burnout contagion processes among teachers. *Journal of Applied Social Psychology, 30*(11). 2289-2308.
<https://doi.org/10.1111/j.1559-1816.2000.tb02437.x>

- Bass, B. M. (1990). From transactional to transformational leadership: Learning to share the vision. *Organizational Dynamics*, 18(3), 19-31.
[https://doi.org/10.1016/0090-2616\(90\)90061-S](https://doi.org/10.1016/0090-2616(90)90061-S)
- Becker, E. S., Goetz, T., Morger, V., & Ranellucci, J. (2014). The importance of teachers' emotions and instructional behavior for their students' emotions: An experience sampling analysis. *Teaching and Teacher Education*, 43, 15-26.
<https://doi.org/10.1016/j.tate.2014.05.002>
- Beltman, S., Mansfield, C., & Price, A. (2011). Thriving not just surviving: A review of research on teacher resilience. *Educational Research Review*, 6, 185-207.
<https://doi.org/10.1016/j.edurev.2011.09.001>
- Benevene, P., De Stasio, S., Fiorilli, C., Buonomo, I., Ragni, B., Briegas, J. J. M., & Barni, D. (2019). Effect of teachers' happiness on teachers' health: The mediating role of happiness at work. *Frontiers in Psychology*, 10, 1-10. <https://doi.org/10.3389/fpsyg.2019.02449>
- Betoret, F. D. (2009). Self-efficacy, school resources, job stressors and burnout among Spanish primary and secondary school teachers: A structural equation approach. *Educational Psychology*, 29(1), 45-68. <https://doi.org/10.1080/01443410802459234>
- Betoret, F. D., & Artiga, A. G. (2010). Barriers perceived by teachers at work, coping strategies, self-efficacy and burnout. *The Spanish Journal of Psychology*, 13, 637-654.
<https://doi.org/10.1017/S1138741600002316>
- Bitsadze, M., & Japaridze, M. (2014). Personal and social aspects of teacher burnout in Georgia, *Problems of Education in the 21st Century*, 59, 7-14.
<http://eprints.iliauni.edu.ge/id/eprint/4961>
- Black, S. 2001. Morale matters: When teachers feel good about their work student achievement rises. *American School Board Journal*, 188(1), 40-43.
- Bottiani, J. H., Duran, C. A. K., Pas, E. T., & Bradshaw, C. P. (2019). Teacher stress and burnout in urban middle schools: Associations with job demands, resources, and effective classroom practices. *Journal of School Psychology*, 77, 36-51.
<https://doi.org/10.1016/j.jsp.2019.10.002>
- Borg, M. G., & Riding, R. J. (1991). Occupational stress and satisfaction in teaching. *British Educational Research Journal*, 17(3), 263-281.
<https://doi.org/10.1080/0141192910170306>

- Boyd, W., & Shouse, R. (1997). The problems and promise of urban schools. In H. Walberg, O. Reyes, & R. Weissberg (Eds.), *Children and youth: Interdisciplinary perspectives* (pp. 141-165). SAGE Publications.
- Boyle, G. J., Borg, M. G., Falzon, J. M., & Baglioni, A. J. (1995). A structural model of the dimensions of teacher stress. *British Journal of Educational Psychology*, 65(1), 49-67. <https://doi.org/10.1111/j.2044-8279.1995.tb01130.x>
- Bricheno, P., Brown, S., & Lubansky, R. (2009). *Teacher wellbeing: A review of the evidence*. Teacher Support Network.
- Briner, R., & Dewberry, C. (2007). *Staff wellbeing is key to school success. A research study into the links between staff wellbeing and school performance*. Worklife Support. <http://www.teachertoolkit.co.uk/wp-content/uploads/2014/07/5902birkbeckwbperfsummaryfinal.pdf>
- Brown, D., Soto-Corominas, A., Surez, J.L., & de la Rosa, J. (2016). Overview—the social media data processing pipeline. In L. Sloan & A. Quan-Haase (Eds.), *The SAGE Handbook of Social Media Research Methods* (pp. 125-145). SAGE Publications. <http://dx.doi.org/10.4135/9781473983847>
- Burke, R. J., & Greenglass, E. R. (1993). Work stress, role conflict, social support, and psychological burnout among teachers. *Psychological Reports*, 73, 371-380. <https://doi.org/10.2466/pr0.1993.73.2.371>
- Buyukgoze-Kavas, A., Duffy, R., Guneri, O., & Autin, K. (2014). Job satisfaction among Turkish teachers: Exploring differences by school level. *Journal of Career Assessment*, 22, 261-273. <https://doi.org/10.1177/1069072713493980>
- Cameron, M., & Lovett, S. (2014). Sustaining the commitment and realising the potential of highly promising teachers. *Teachers and Teaching*, 21(2), 150-163. <http://dx.doi.org/10.1080/13540602.2014.928132>.
- Cansoy, R. (2018). The Relationship between school principals' leadership behaviours and teachers' job satisfaction: A systematic review. *International Education Studies*, 12(1), 37. <https://doi.org/10.5539/ies.v12n1p37>
- Capella, E., Frazier, S.L., Atkins, M. S., Schoenwald, S. K., & Gliss, C. (2008). Enhancing schools' capacity to support children in poverty: An ecological model of school-based

- mental health services. *Administration and Policy in Mental Health*, 35(5), 395-409. <https://doi.org/10.1007/s10488-008-0182-y>
- Carpenter, J. P., & Krutka, D. G. (2015). Engagement through microblogging: Educator professional development via Twitter. *Professional Development in Education*, 41(4), 707-728. <https://doi.org/10.1080/19415257.2014.939294>
- Carroll, T. G., & Foster, E. (2010). Who will teach? Experience matters. *National Commission on Teaching and America's Future*, 1-44.
- Carson, R. L., Baumgartner, J. J., Matthews, R. A., & Tsouloupas, C. N. (2010). Emotional exhaustion, absenteeism, and turnover intentions in childcare teachers: Examining the impact of physical activity behaviors. *Journal of Health Psychology*, 15, 905-914. <http://doi.org/10.1177/1359105309360697>
- Castro, A. J., Kelly, J., & Shih, M. (2010). Resilience strategies for new teachers in high-needs areas. *Teaching and Teacher Education*, 26(3), 622-629. <https://doi.org/10.1016/j.tate.2009.09.010>
- Chan, D. W. (1998). Stress, coping strategies and psychological distress among secondary school teachers in Hong Kong. *American Educational Research Journal*, 35, 145-163. <https://doi.org/10.3102/00028312035001145>
- Chang, M.L. (2009). An appraisal perspective of teacher burnout: Examining the emotional work of teachers. *Educational Psychology Review*, 21, 193-218. <https://doi.org/10.1007/s10648-009-9106-y>
- Chaplain, R. P. (2008). Stress and psychological distress among trainee secondary teachers in England. *Educational Psychology*, 28(2), 195-209. <https://doi.org/10.1080/01443410701491858>
- Che Ahmad, C. N., Osman, K., & Halim, L. (2013). Physical and psychosocial aspects of the learning environment in the science laboratory and their relationship to teacher satisfaction. *Learning Environments Research*, 16(3), 367-385. <https://doi.org/10.1007/s10984-013-9136-8>
- Chen, X.P., Liu, D., & Portnoy, R. (2012). A multilevel investigation of motivational cultural intelligence, organizational diversity climate, and cultural sales: Evidence from US real estate firms. *Journal of Applied Psychology*, 97(1), 93-106. <https://doi.org/10.1037/a0024697>

- Chen, Y., McCabe, B., & Hyatt, D. (2017). Impact of individual resilience and safety climate on safety performance and psychological stress of construction workers: A case study of the Ontario construction industry. *Journal of Safety Research, 61*, 167-176.
<https://doi.org/10.1016/j.jsr.2017.02.014>
- Cheng, Y. C. (1993). Profiles of organizational culture and effective schools. *School Effectiveness and School Improvement, 4*(2), 85-110.
<https://doi.org/10.1080/0924345930040201>
- Chiou, H.-H. (2016). Occupational stress, self-efficacy, optimism and health problems: A study of high school teachers in Taiwan. *Journal of Liberal Arts and Social Sciences, 12*(1), 25-43.
- Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology, 64*, 89-136. <https://doi.org/10.1111/j.1744-6570.2010.01203.x>
- Chrobot-Mason, D.L. (2003). Keeping the promise: Psychological contract violations for minority employees. *Journal of Managerial Psychology, 18*(1), 22-45.
- Coates, T. J., & Thoresen, C. E. (1976). Teacher anxiety: A review with recommendations. *Review of Educational Research, 6*(2), 159-18.
- Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement, 20*, 37-46.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd Edition). Lawrence Erlbaum Associates.
- Collie, R. J., & Martin, A. J. (2017). Teachers' sense of adaptability: Examining links with perceived autonomy support, teachers' psychological functioning, and students' numeracy achievement. *Teaching and Teacher Education, 55*, 29-39.
<https://doi.org/10.1016/j.tate.2017.03.003>
- Collie, R. J., Shapka, J. D., & Perry, N. E. (2012). School climate and social-emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. *Journal of Educational Psychology, 104*(4), 1189-1204. <https://doi.org/10.1037/a0029356>
- Combs, G. M., & Milosevic, I. (2016). Workplace Discrimination and the Wellbeing of Minority Women: Overview, Prospects, and Implications. In M. L. Connerley & J. Wu (Eds.),

- Handbook on Well-Being of Working Women* (pp. 17-31). Springer.
https://doi.org/10.1007/978-94-017-9897-6_2
- Darling-Hammond, L., Burns, D., Campbell C., Goodwin, A.L., Hammerness, K. Low, E., McIntyre, A., Sato, M., & Zeichner, K. 2017. *Empowered educators: How high-performing systems shape teaching quality around the world*. Jossey-Bass.
- Day, C. (2008). Committed for life? Variations in teachers' work, lives and effectiveness. *Journal of Educational Change*, 9(3), 243-260.
<https://doi.org/10.1007/s10833-007-9054-6>
- Day, C., & Gu, Q. (2009). Veteran teachers: Commitment, resilience and quality retention. *Teachers and Teaching*, 15(4), 441-457. <https://doi.org/10.1080/13540600903057211>
- De Stasio, S., Fiorilli, C., Benevene, P., Boldrini, F., Ragni, B., Pepe, A., & Maldonado Briegas, J. J. (2019). Subjective happiness and compassion are enough to increase teachers' work engagement? *Frontiers in Psychology*, 10, 1-10.
<https://doi.org/10.3389/fpsyg.2019.02268>
- Demerouti E., & Bakker A.B. (2011). The job demands-resources model: Challenges for future research. *Journal of Industrial Psychology*, 37, 1-9.
<https://doi.org/10.4102/sajip.v37i2.974>
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The Job Demands-Resources model of burnout. *Journal of Applied Psychology*, 86, 499-512.
<https://doi.org/10.1037/0021-9010.86.3.499>
- Demerouti, E., Bakker, A. B., Vardakou, I., & Kantas, A. (2003). The convergent validity of two burnout instruments: A multitrait-multimethod analysis. *European Journal of Psychological Assessment*, 19, 12-23.
- Diener, E. (2009). *The science of wellbeing: The collected works of Ed Diener*. Springer.
- Dicke, T., Parker, P. D., Marsh, H. W., Kunter, M., Schmeck, A., & Leutner, D. (2014). Self-efficacy in classroom management, classroom disturbances, and emotional exhaustion: A moderated mediation analysis of teacher candidates. *Journal of Educational Psychology*, 106(2), 569-583. <https://doi.org/10.1037/a0035504>.
- Dicke, T., Stebner, F., & Kunter, M. (2017). A longitudinal study of teachers' occupational well-being: Applying the Job Demands-Resources model. *Journal of Occupational Health Psychology*, 23(2), 262-277. <https://doi.org/10.1037/ocp0000070>

- Dolbier, C. L., Webster, J. A., McCalister, K. T., Mallon, M. W., & Steinhardt, M. A. (2005). Reliability and validity of a single-item measure of job satisfaction. *American Journal of Health Promotion, 19*(3), 194-198. <https://doi.org/10.4278/0890-1171-19.3.194>
- Donaldson, L. (2001). *The contingency theory of organizations*. SAGE Publications.
- Duckworth, A. L., Quinn, P. D., & Seligman, M. E. P. (2009). Positive predictors of teacher effectiveness. *The Journal of Positive Psychology, 4*(6), 540-547. <https://doi.org/10.1080/17439760903157232>
- Dworkin, A. G., Haney, C. A., & Teschow, R. L. (1990). Stress and illness behavior among urban public school teachers. *Education Administration Quarterly, 26*(1), 59-71. doi.org/10.1177/0013161x90026001004
- Eddy, C. L., Herman, K. C., & Reinke, W. M. (2019). Single-item teacher stress and coping measures: Concurrent and predictive validity and sensitivity to change. *Journal of School Psychology, 76*, 17-32. <https://doi.org/10.1016/j.jsp.2019.05.001>
- Education Service Advisory Committee. (1998). *Managing work-related stress: A guide for managers and teachers in the schools* (2nd Ed.). HMSO.
- Evers, A.T., van der Heijden, B.I.J.M., Kreijns, K., & Vermeulen, M. (2016). Job demands, job resources, and flexible competence: The mediating role of teachers' professional development at work. *Journal of Career Development, 43*(3), 227-243. <https://doi.org/10.1177/0894845315597473>
- Fantilli, R. D., & McDougall, D. E. (2009). A study of novice teachers: Challenges and supports in the first years. *Teaching and Teacher Education, 25*(6), 814-825. <https://doi.org/10.1016/j.tate.2009.02.021>
- Fernet, C., Austin, S., Trépanier, S.-G., & Dussault, M. (2013). How do job characteristics contribute to burnout? Exploring the distinct mediating roles of perceived autonomy, competence, and relatedness. *European Journal of Work and Organizational Psychology, 22*, 123-137. <https://doi.org/10.1080/1359432X.2011.632161>
- Fernet, C., Guay, F., Senécal, C., & Austin, S. (2012). Predicting intraindividual changes in teacher burn-out: The role of perceived school environment and motivational factors. *Teaching and Teacher Education, 28*, 514-525. <https://doi.org/10.1016/j.tate.2011.11.013>

- Fleming, J. L., Mackrain, M., & LeBuffe, P. A. (2013). Caring for the caregiver: Promoting the resilience of teachers. In S. Goldstein & R. B. Brooks (Eds.), *Handbook of resilience in children* (pp. 387-397). Springer. http://doi.org/10.1007/978-1-4614-3661-4_22
- Flores, M. A. (2006). Being a novice teacher in two different settings: Struggles, continuities, and discontinuities. *Teachers College Record, 108*(10), 2021-2052. <http://doi.org/10.1111/j.1467-9620.2006.00773.x>
- Friedman, I. A. (1995). Student behavior patterns contributing to teacher burnout. *Journal of Educational Research, 88*, 281-333. <https://doi.org/10.1080/00220671.1995.9941312>.
- Freudenberger, H. J. (1980). *Burn-out: The high cost of high achievement*. Anchor Press.
- Galloway, D., Boswell, K., Panckhurst, F., Boswell, C., & Green, K. (1985). Sources of satisfaction and dissatisfaction for New Zealand primary school teachers. *Educational Research, 27*(1), 44-51. <https://doi.org/10.1080/0013188850270107>
- Geving, A. M. (2007). Identifying the types of student and teacher behaviours associated with teacher stress. *Teaching and Teacher Education, 23*(5), 624-640. <https://doi.org/10.1016/J.TATE.2007.02.006>
- Glander, M., Cornman, S.Q., Zhou, L., Noel, A.M., and Nakamoto, N. (2018). “An Evaluation of the Data From the Teacher Compensation Survey: School Year 2007–08 Through 2009–10.” (NCES 2018-120) *National Center for Education Statistics*, Institute of Education Sciences, U.S. Department of Education.
- Gliebe, S. K. (2013). A study of the relationship between cognitive emotion regulation, optimism, and perceived stress among selected teachers in Lutheran schools. *Lutheran Education Journal, 143*(2), 1-10.
- Gligorović, B., Nikolić, M., Terek, E., Glušac, D., & Tasić, I. (2016). Okul Kültürünün Sırp İlköğretim Öğretmenlerinin İş Doyumu Üzerine Etkisi [The impact of school culture on Serbian primary teachers' job satisfaction]. *Hacettepe University Journal of Education, 31*(2), 231-248. <https://doi.org/10.16986/HUJE.2016015184>
- Goddard, J., & Foster, R. (2001). The experiences of neophyte teachers: A critical constructivist assessment. *Teaching and Teacher Education, 17*, 349-365. [https://doi.org/10.1016/S0742-051X\(00\)00062-7](https://doi.org/10.1016/S0742-051X(00)00062-7)

- Goldring, R., Gray, L., & Bitterman A. (2013). *Characteristics of Public and Private Elementary and Secondary School Teachers in the United States: Results From the 2011–12 Schools and Staffing Survey*. U.S. Department of Education.
- Grayson, J. L., & Alvarez, H. K. (2008). School climate factors relating to teacher burnout: A mediator model. *Teaching and Teacher Education, 24*, 1349 -1363.
<http://doi.org/10.1016/j.tate.2007.06.005>
- Griffin, M.A., & Curcuruto, M.M. (2016) Safety climate in organizations. *Annual Review of Organizational Psychology and Organizational Behavior, 3*(3), 191-212.
<https://doi.org/10.1146/annurev-orgpsych-041015-062414>
- Greening, D.W., & Turban, D.B. (2000). Corporate social performance as a competitive advantage in attracting a quality workforce. *Business and Society, 39*(3), 254-28.
<https://doi.org/10.1177/000765030003900302>
- Greenglass, E.R., & Burke, R.J. (2003). Teacher stress. In M.D. Dollard, A.H. Winefield, & H.R. Winefield (Eds.), *Occupational stress in the service professions* (pp. 213-236). Taylor and Francis.
- Griffin, D. (2010). A survey of Bahamian and Jamaican teachers' level of motivation and job satisfaction. *Journal of Invitational Theory and Practice, 16*, 56-76. <https://doi.org/10.11114/jets.v6i10.3451>
- Gu, Q., & Day, C. (2007). Teachers resilience: A necessary condition for effectiveness. *Teaching and Teacher Education, 23*(8), 1302-1316. <https://doi.org/10.1016/j.tate.2006.06.006>
- Guastello, S. J., Gershon, R. R., & Murphy, L. R. (1999). Catastrophe model for the exposure to blood-borne pathogens and other accidents in health care settings. *Accident Analysis and Prevention, 31*(6), 739-749. [https://doi.org/10.1016/s0001-4575\(99\)00037-8](https://doi.org/10.1016/s0001-4575(99)00037-8)
- Gyekye, S. A. (2005). Workers' perceptions of workplace safety and job satisfaction. *International Journal of Occupational Safety and Ergonomics, 11*(3), 291-302.
<https://doi.org/10.1080/10803548.2005.11076650>
- Haj, S., J., & Jubran, A. M. (2016). The extent of principals' application of the transformational leadership and its relationship to the level of job satisfaction among teachers of Galilee Region. *Journal of Education and Practice, 7*(11), 114-119.
<https://doi.org/10.5539/ies.v12n1p37>

- Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology, 43*(6), 495-513.
<https://doi.org/10.1016/J.JSP.2005.11.001>
- Hamre, B., & Pianta, R. C. (2001). Early teacher-child relationships and trajectory of school outcomes through eighth grade. *Child Development, 72*, 625-638.
<https://doi.org/10.1111/1467-8624.00301>
- Hancock, C. B., & Scherff, L. (2010). Who will stay and who will leave? Predicting secondary English teacher attrition risk. *Journal of Teacher Education, 61*(4), 328-338.
<https://doi.org/10.1177/0022487110372214>
- Harrell, W. A. (1990). Perceived risk of occupational injury: Control over pace of work and blue-collar versus white-collar work. *Perceptual and Motor Skills, 70*, 1351-1359.
<https://doi.org/10.2466/pms.1990.70.3c.1351>
- Harrison, J. R., Vannest, K., Davis, J., & Reynolds, C. (2012). Common problem behaviors of children and adolescents in general education classrooms in the United States. *Journal of Emotional and Behavioral Disorders, 20*, 55- 64.
<http://doi.org/10.1177/1063426611421157>
- Hastings, R., & Bham, M. (2003). The relationship between student behaviour patterns and teacher burnout. *School Psychology International, 24*(1), 115-127.
<https://doi.org/10.1177/0143034303024001905>
- Hayes, B. E., Perander, J., Smecko, T., & Trask, J. (1998). Measuring perceptions of workplace safety: Development and validation of the work safety Scale. *Journal of Safety Research, 29*(3), 17. <https://doi.org/10.1016/S0022-4375%2898%2900011-5>
- Heck, R. H., & Marcoulides, G. A. (1996) School culture and performance: Testing the invariance of an organizational model. *School Effectiveness and School Improvement, 7*(1), 76-96. <https://doi.org/10.1080/0924345960070104>
- Herman, K. C., Hickmon-Rosa, J., & Reinke, W. M. (2018). Empirically derived profiles of teacher stress, burnout, self-efficacy, and coping and associated student outcomes. *Journal of Positive Behavior Interventions, 20*(2), 90-100.
<https://doi.org/10.1177/1098300717732066>
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*, 513-524.

- Hobfoll, S. E., & Freedy, J. (1993). Conservation of resources: A general stress theory applied to burnout. In W. B. Schaufeli, C. Maslach, & T. Marek (Eds.), *Professional burnout: Recent development in theory and research* (pp. 115-129). Taylor & Francis.
- Hobfoll, S.E., & Schumm, J.A. (2002). Conservation of resources theory: Application to public health promotion. In DiClemente, R. J., Crosby, R. A., & Kegler, M. C. (Eds.), *Emerging theories in health promotion practice and research: Strategies for improving public health* (pp. 285-312). Jossey-Bass.
- Hobfoll, S. E., & Shirom, A. (2000). Conservation of resources theory: Applications to stress and management in the workplace. In R. T. Golembiewski (Ed.). *Handbook of organization behaviour* (pp. 57-81). Dekker.
- Hofmann D., & Stetzer A. (1996). A cross-level investigation of factors influencing unsafe behaviours and accidents. *Personnel Psychology*, 49, 307-339.
<https://doi.org/10.1111/j.1744-6570.1996.tb01802.x>
- Hong, J. Y. (2010). Pre-service and beginning teachers' professional identity and its relation to dropping out of the profession. *Teaching and Teacher Education*, 26(8), 1530-1543.
[doi:10.1016/j.tate.2010.06.003](https://doi.org/10.1016/j.tate.2010.06.003).
- Hongying, S. (2007). Literature review of teacher job satisfaction. *Chinese Education and Society*, 40(5), 11-16. <https://doi.org/10.2753/CED1061-1932400502>
- Howard, D., & Johnson, B. (2004). Resilient teachers: Resisting stress and burnout. *Social Psychology of Education*, 7(3), 399-420. <https://doi.org/10.1007/s11218-004-0975-0>
- Hoy, W. K. (1990) Organizational climate and culture: a conceptual analysis of the school workplace. *Journal of Educational and Psychological Consultation*, 1(2), 149-168.
https://doi.org/10.1207/s1532768xjepc0102_4
- Huang, Y.-H., Lee, J., McFadden, A. C., Murphy, L. A., Robertson, M. M., Cheung, J. H., & Zohar, D. (2016). Beyond safety outcomes: An investigation of the impact of safety climate on job satisfaction, employee engagement and turnover using social exchange theory as the theoretical framework. *Applied Ergonomics*, 55, 248-257.
<https://doi.org/10.1016/j.apergo.2015.10.007>
- Hur, J. W., & Brush, T. A. (2009). Teacher participation in online communities: Why do teachers want to participate in self-generated online communities of K-12 teachers?

- Journal of Research on Technology in Education*, 41(3), 279-303.
<https://doi.org/10.1080/15391523.2009.10782532>
- Ingersoll, R. (2001). *Teacher turnover, teacher shortages and the organization of schools*. Center for the Study of Teaching and Policy, University of Washington.
https://repository.upenn.edu/cpre_researchreports/12
- Ingersoll, R. (2003). *Is there really a teacher shortage?* Center for the Study of Teaching and Policy, University of Washington. https://repository.upenn.edu/cpre_researchreports/37
- James, L.R., James, L.A., & Ashe, D.K. (1990). The meaning of organizations: the role of cognition and values. In Schneider, B. (Ed), *Organizational climate and culture* (p.40-84). Jossey-Bass.
- James, G., Witten, D., Hastie, T., & Tibshirani, R. (2013). *An introduction to statistical learning, Vol. 112*, New York: Springer.
- Jenkins, H., Clinton, K., Purushotma, R., Robison, A. J., & Weigel, M. (2009a). *Confronting the challenges of participatory culture: Media education for the 21st century*. MIT Press.
- Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research*, 79(1), 491-525. <https://doi.org/10.3102/0034654308325693>
- Johnson, S. M. (2006, July 6). The workplace matters: Teacher quality, retention and effectiveness. NEA. <https://files-eric-ed-gov/fulltext/ED495822.pdf>
- Johnson, B., & Down, B. (2013). Critically re-conceptualising early career teacher resilience. *Discourse: Studies in the Cultural Politics of Education*, 34(5), 703-715.
<https://doi.org/10.1080/01596306.2013.728365>
- Jorgensen, B. S., Jamieson, R. D., & Martin, J. F. (2010). Income, sense of community and subjective well-being: Combining economic and psychological variables. *Journal of Economic Psychology*, 31(4), 612-623. <https://doi.org/10.1016/j.joep.2010.04.002>
- Ju, C., Lan, J., Li, Y., Feng, W., & You, X. (2015). The mediating role of workplace social support on the relationship between trait emotional intelligence and teacher burnout. *Teaching and Teacher Education*, 51, 58-67. <https://doi.org/10.1016/j.tate.2015.06.001>
- Jürgens, P. (2012). Communities of communication: Making sense of the “social” in social media. *Journal of Technology in Human Services*, 30(3-4): 186-203.
<https://doi.org/10.1080/15228835.2012.746079>

- Kadi, A. (2015). Investigating teachers' organizational socialization levels and perceptions about leadership styles of their principals. *Journal of Education and Training Studies*, 3(4), 101-109. <https://doi.org/10.11114/jets.v3i4.837>
- Karavas, E. (2010). How satisfied are Greek EFL teachers with their work? Investigating the motivation and job satisfaction levels of Greek EFL teachers. *Porta Linguarum*, 14, 59-78.
- Kersaint, G. (2005, August). *Teacher attrition: A costly loss to the nation and to the states*. Alliance for Excellent Education. <http://all4ed.org/wpcontent/uploads/2007/06/TeacherAttrition.pdf>
- Kitching, K., Morgan, M., & O'Leary, M. (2009). It's the little things: Exploring the importance of commonplace events for early-career teachers' motivation. *Teachers and Teaching: Theory and Practice*, 15(1), 43-58. <https://doi.org/10.1080/13540600802661311>
- Klassen, R. M., Bong, M., Usher, E. L., Chong, W. H., Huan, V. S., Wong, I. Y. F., & Georgiou, T. (2009). Exploring the validity of a teachers' self-efficacy scale in five countries. *Contemporary Educational Psychology*, 34(1), 67-76. <https://doi.org/10.1016/J.CEDPSYCH.2008.08.001>
- Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology*, 102(3), 741-756. <https://doi.org/10.1037/a0019237>
- Klassen, R. M., & Chiu, M. M. (2011). The occupational commitment and intention to quit of practicing and pre-service teachers: Influence of self-efficacy, job stress, and teaching context. *Contemporary Educational Psychology*, 36, 114-129. <https://doi.org/10.1016/j.cedpsych.2011.01.002>
- Klassen, R. M., Usher, E. L., & Bong, M. (2010). Teachers' collective efficacy, job satisfaction, and job stress in cross-cultural context. *Journal of Experimental Education*, 78, 464-486.
- Klassen, R., Wilson, E., Siu, A. F. Y., Hannok, W., Wong, M. W., Wongsri, N., Sonthisap, P., Pibulchol, C., Buranachaitavee, Y., & Jansem, A. (2013). Preservice teachers' work stress, self-efficacy, and occupational commitment in four countries. *European Journal of Psychology of Education*, 28, 1289-1309. <http://doi.org/10.1007/s10212-012-0166-x>

- Kokkinos, C. M. (2007). Job stressors, personality and burnout in primary school teachers. *British Journal of Educational Psychology*, 77(1), 229-243.
<https://doi.org/10.1348/000709905X90344>
- Korb, K., & Akintunde, O. (2013). Exploring factors influencing teacher job satisfaction in Nigerian schools. *Nigerian Journal of Teacher Education and Teaching*, 11(1), 211-223.
- Kosinski, M., Matz, S. C., Gosling, S. D., Popov, V., & Stillwell, D. (2015). Facebook as a research tool for the social sciences: Opportunities, challenges, ethical considerations, and practical guidelines. *American Psychologist*, 70(6), 543-556.
<https://doi.org/10.1037/a0039210>
- Kraft, M.A., Simon, N.S., & Lon, M.A. (2020). Sustaining a sense of success: the Importance of teacher working conditions during the COVID-19 pandemic. *Education Working Paper*, 20 (279). <https://doi.org/10.26300/35nj-v890/>
- Krippendorff, K. (2018). *Content analysis: An introduction to its methodology* (4th ed.). SAGE Publications.
- Kun, A., & Gadanez, P. (2019). Workplace happiness, well-being and their relationship with psychological capital: A study of Hungarian Teachers. *Current Psychology*.
<https://doi.org/10.1007/s12144-019-00550-0>
- Kwon, K. & Kim, T. (2020). An integrative literature review of employee engagement and innovative behavior: Revisiting the JD-R model. *Human Resource Management Review*, 30. <https://doi.org/10.1016/j.hrmr.2019.100704>
- Kyriacou, C. (1987). Teacher stress and burnout: an international review. *Educational Research*, 29, 146–52.
- Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review*, 53(1), 37-41. <https://doi.org/10.1080/0013191012003362>
- Lackritz, J. R. (2004). Exploring burnout among university faculty: Incidence, performance, and demographic issues. *Teaching and Teacher Education*, 20(7), 713–729.
- Ladd, H. F. (2011). Teachers' perceptions of their working conditions: How predictive of planned and actual teacher movement? *Educational Evaluation and Policy Analysis*, 33(2), 235-261. <https://doi.org/10.3102/0162373711398128>
- Lambert, R. G., McCarthy, C., O'Donnell, M., & Wang, C. (2009). Measuring elementary teacher stress and coping in the classroom: Validity evidence for the classroom appraisal

- of resources and demands. *Psychology in the Schools*, 46, 973-988.
<https://doi.org/10.1002/pits.20438>
- Langley, A. K., Nadeem, E., Kataoka, S. H., Stein, B. D., & Jaycox, L. H. (2010). Evidenced-based mental health programmes in schools: Barriers and facilitators of successful implementation. *School Mental Health*, 2(3), 105-113.
<https://doi.org/10.1007/s12310-010-9038-1>
- Lau, P.S.U., Yuen, M.T., & Chan, R.M.C. (2005). Do demographic characteristics make a difference to burnout among Hong Kong Secondary school teachers. *Social Indicators Research*, 71, 491-516. <https://doi.org/10.1007/s11205-004-8033-z>
- Le Cornu, R. (2013). Building Early Career Teacher Resilience: The Role of Relationships. *The Australian Journal of Teacher Education*, 38(4), 1-16.
<https://doi.org/10.14221/ajte.2013v38n4.4>
- Leung, T., Siu, O., & Spector, P. E. (2000). Faculty stressors, job satisfaction, and psychological distress among university teachers in Hong Kong: The role of locus of control. *International Journal of Stress Management*, 7(2), 121-138.
<https://doi.org/10.1023/A:1009584202196>
- Lewig, K., Xanthopoulou, D., Bakker, A.B., Dollard, M., & Metzger, J. (2007). Burnout and connectedness among Australian volunteers: A test of the Job Demands-Resources model. *Journal of Vocational Behavior*, 71, 429-445.
<https://doi.org/10.1015/j.jvb.2007.07.003>
- Macdonald, D. (1999). Teacher attrition: a review of literature. *Teaching and Teacher Education*, 15(8), 835-848. [https://doi.org/10.1016/S0742-051X\(99\)00031-1](https://doi.org/10.1016/S0742-051X(99)00031-1)
- Madera, J.M., Dawson, M., & Neal, J.A. (2013). Hotel managers' psychological diversity climate and job satisfaction: the mediating effects of role ambiguity and conflict. *International Journal of Hospitality Management*, 35(1), 28-34.
- Madera, J.M., Dawson, M. and Guchait, P. (2016). Psychological diversity climate: Justice, racioethnic minority status and job satisfaction. *International Journal of Contemporary Hospitality Management*, 28(11), 2514-2532.
<https://doi.org/10.1108/IJCHM-06-2015-0304>
- Marinell, W. H., & Coca, V. M. (2013). *Who stays and who leaves? Findings from a three part study of teacher turnover in NYC middle schools*. New York: The Research Alliance for

NYC Schools.

Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach burnout inventory manual* (3rd ed.). Mind Garden, Inc.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, 52(1), 397-422. <https://doi.org/10.1146/annurev.psych.52.1.397>

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50(4), 370-396.

McCallum, F., & Price, D. (2010). Well teachers, well students. *Journal of Student Wellbeing*, 4(1), 19-34. <https://doi.org/10.21913/JSW.v4i1.599>

McCarthy, C. J., Lambert, R. G., & Reiser, J. (2014). Vocational concerns of elementary teachers: Stress, job satisfaction, and occupational commitment. *Journal of Employment Counseling*, 51(2), 59-74. <https://doi.org/10.1002/j.2161-1920.2014.00042.x>

McKay, P.F., Avery, D.R., Tonidandel, S., Morris, M.A., Hernandez, M., & Hebl, M.R. (2007), Racial differences in employee retention: Are diversity climate perceptions the key? *Personnel Psychology*, 60(10), 35-62. <https://doi.org/j.1744-6570.2007.00064.x>

McKay, P.F., Avery, D.R., Liao, H., Morris, M.A. (2011) Does diversity climate lead to customer satisfaction? It depends on the service climate and business unit demography. *Organization Science*, 22(3), 788-803. <https://doi.org/10.1287/orsc.1100.0550>

McLean, L., & Connor, C. M. (2015). Depressive symptoms in third-grade teachers: Relations to classroom quality and student achievement. *Child Development*, 86(3), 945-954. <https://doi.org/10.1111/cdev.12344>

Meier, K. J. 2000. *Politics and the bureaucracy*. Harcourt College Publishing Company.

Meixler, E. (2018, February 23). *Teachers are using #ArmMeWith to demand that they be armed with supplies, not guns*. Time. <https://time.com/5172245/armmewith-teachers-gun-control/>

Melamed, S., Shirom, A., Toker, S., Berliner, S., & Shapira, I. (2006). Burnout and risk of cardiovascular disease: Evidence, possible causal paths, and promising research directions. *Psychological Bulletin*, 132(3), 327-353. <https://doi.org/10.1037/0033-2909.132.3.327>

Merica, D., & Klein, B. (2018, February 22). *Trump suggests arming teaching as a solution to increase school safety*. CNN. <https://www.cnn.com/2018/02/21/politics/trump-listening-sessions-parkland-students/index.html>

- Mo, K. W. (1991). Teacher burnout: relations with stress, personality, and social support. *Education Journal, 19*, 3–12.
- Montgomery, C., & Rupp, A. A. (2005). A meta-analysis for exploring the diverse causes and effects of stress in teachers. *Canadian Journal of Education, 28*(3), 458-486.
<https://doi.org/10.2307/4126479>
- Mor Barak, M.E., Cherin, D.A., & Berkman, S. (1998). Organizational and personal dimensions in diversity climate. *Journal of Applied Behavioral Science, 34*(1), 82-104.
<https://doi.org/10.1177/0021886398341006>
- Mor Barak, M. E., & Levin, A. (2002). Outside of the corporate mainstream and excluded from the work community: A study of diversity, job satisfaction and well-being. *Community, Work & Family, 5*(2), 133-157. <https://doi.org/10.1080/13668800220146346>
- Moynihan, D.P., & Pandey S.K. (2005). Testing how management matters in an era of government by performance management. *Journal of Public Administration Research and Theory, 15*(3), 421-439. <https://doi.org/10.1093/jopart/mui016>
- Nahrgang, J. D., Morgeson, F. P., & Hofmann, D. A. (2011). Safety at work: A meta-analytic investigation of the link between job demands, job resources, burnout, engagement, and safety outcomes. *Journal of Applied Psychology, 96*, 71-94.
<https://doi.org/10.1037/a0021484>
- Naderi, A. N. (2012). Teachers: Emotional intelligence, job satisfaction, and organizational commitment. *Journal of Workplace Learning, 24*(4), 256–269.
<https://doi.org/10.1108/13665621211223379>
- Nagy, E., & Takács, I. (2017). The road to teacher burnout and its possible protecting factors - A narrative review. *Review of Social Sciences, 2*(8), 9-22.
- National Association for College Admission Counseling & American School Counselor Association. (2015). State-by-State student-to-counselor ratio report: 10-year trends.
<https://www.schoolcounselor.org/asca/media/asca/Publications/ratioreport.pdf>
- National Center for Educational Statistics (2019, March 3). *Teacher retention, mobility, and attrition* [Press release]. <https://nces.ed.gov/pubsearch/>
- Neal, A., Griffin, M. A., & Hart, P. M. (2000). The impact of organizational climate on safety climate and individual behavior. *Safety Science, 34*(1-3), 99-109.
[https://doi.org/10.1016/S0925-7535\(00\)00008-4](https://doi.org/10.1016/S0925-7535(00)00008-4)

- Nikiporets-Takigawa, G. & Avcinova, G. (2018). *Political well-being: Concept and research framework*. International Conference on Research Paradigms Transformation in Social Sciences: Future Academy. <https://doi.org/10.15405/epsbs.2018.12.108>
- Olsen, B., & Anderson, L. (2007). Courses of action: A qualitative investigation into urban teacher retention and career development. *Urban Education, 42*(1), 5-29. <https://doi.org/10.1177/0042085906293923>
- Otero López, J. M., Castro Bolaño, C., Santiago Marino, M. J., & Villardefrancos Pol, E. (2010). Exploring stress, burnout, and job dissatisfaction in secondary school teachers. *International Journal of Psychology and Psychological Theory, 10*(1), 107-123. <https://doi.org/10.30552/ejep.v3i2.43>
- O'Toole, L.J., & Meier, K.J. (1999). Modeling the impact of public management: Implications of structural context. *Journal of Public Administration Research and Theory, 9*(4), 505-526, <https://doi.org/10.1093/oxfordjournals.jpart.a024421>
- Pandey, S.K., & Wright, B.E. (2006). Connecting the dots in public management: Political environment, organizational goal ambiguity, and the public manager's role ambiguity. *Journal of Public Administration Research and Theory, 16*(4), 511-532. <https://doi.org/10.1093/jopart/muj006>
- Papatraianou, L. H., & Le Cornu, R. (2014). Problematising the role of personal and professional relationships in early career teacher resilience. *Australian Journal of Teacher Education, 39*(1), 100-106. <https://doi.org/10.14221/ajte.2014v39n1.7>
- Pas, E. T., Bradshaw, C. P., & Hershfeldt, P. A. (2012). Teacher-and school-level predictors of teacher efficacy and burnout: Identifying potential areas for support. *Journal of School Psychology, 50*, 129–145.
- Pearson, C. L., & Moomaw, W. (2005). The relationship between teacher autonomy and stress, work satisfaction, empowerment, and professionalism. *Educational Research Quarterly, 29*(1), 38-54.
- Pearson, L. C., & Moomaw, W. (2006). Continuing validation of the teaching autonomy scale. *The Journal of Educational Research, 100*(1), 44-51. <https://doi.org/10.3200/JOER.100.1.44-51>
- Pennebaker, J. W., Booth, R. J., Boyd, R. L., & Francis, M. E. (2015). *Linguistic Inquiry and Word Count: LIWC2015*. Pennebaker Conglomerates. <https://www.LIWC.net>

- Pfeffer, J., & Salancik, G. (1978). *The external control of organizations: A resource-dependence perspective*. Harper & Row.
- Phillips, S., Sen, D., & McNamee, R. (2007). Prevalence and causes of self-reported work-related stress in head teachers. *Occupational Medicine*, *57*(5), 367-376.
<https://doi.org/10.1093/occmed/kqm055>
- Pidgeon, N.F. (1991). Safety culture and risk management in organizations. *Journal of Cross-Cultural Psychology*, *22*(1), 129-140. <https://doi.org/10.1177/0022022191221009>
- Pines, A. M. (1993). Burnout: An existential perspective. In W. Schaufeli, C. Maslach, & T. Marek (Eds.), *Professional Burnout*. Taylor and Francis.
- Pirralha, A. (2017). Political participation and wellbeing in the Netherlands: Exploring the causal links. *Applied Research in Quality of Life*, *12*(2), 327-341.
<https://doi.org/10.1007/s11482-016-9463-x>
- Podgursky, M. (2017). Teams Versus Bureaucracies. In M. Berends, M. G. Springer, H. J. Walberg, & A. Primus (Eds.), *Charter School Outcomes* (1st ed., pp. 61–80). Routledge.
<https://doi.org/10.4324/9781315095806-4>
- Prairie Research Associates. (2015, July 15). *The workplace safety climate survey*.
<https://www.wcb.mb.ca/sites/default/files/resources/PRA%20Safety%20Survey%20Tool.pdf>
- Prasojo, L. D., Habibi, A., Yaakob, M. F. M., Pratama, R., Yusof, M. R., Mukminin, A., Suyanto, & Hanum, F. (2020). Dataset relating to the relationship between teacher self-concept and teacher efficacy as the predictors of burnout: A survey in Indonesian education. *Data in Brief*, *30*, 1-7. <https://doi.org/10.1016/j.dib.2020.105448>
- Pressley, T. & Ha, C. (2021). Teaching during a pandemic: United States teachers' self-efficacy during COVID-19. *Teaching and Teacher Education*, *106*, 1-9.
- Prieto-Ursúa, L. L., Soria, M.S., Martínez, I. M, & Schaufeli, W. (2008). Extension of the Job Demands-Resources model in the prediction of burnout and engagement among teachers over time. *Psicothema*, *20*(3), 354-360.
- Probst T. M. (2002). Layoffs and tradeoffs: production, quality, and safety demands under the threat of job loss. *Journal of Occupational Health Psychology*, *7*(3), 211-220.

- Probst T., & Brubaker T. (2001). The effects of job insecurity on employee safety outcomes: cross-sectional and longitudinal explorations. *Journal of Occupational Health Psychology, 6*(2), 139-159. <https://doi.org/10.1037//1076-8998.6.2.139>
- Pugh, S.D., Dietz, J., Brief, A.P., & Wiley, J.W. (2008). Looking inside and out: the impact of employee and community demographic composition on organizational diversity climate. *Journal of Applied Psychology, 93*(6), 1422-1428. <https://doi.org/10.1037/a0012696>
- Rawat, A., & Nadavulakere, S. (2015). Examining the outcomes of having a calling: Does context matter? *Journal of Business and Psychology, 30*(3), 499-512. <https://doi.org/10.1007/s10869-014-9378-1>
- Reich, J., Buttimer, C. J., Coleman, D., Colwell, R. D., Faruqi, F., & Larke, L. R. (2020). What's lost, what's left, what's next: Lessons learned from the lived experiences of teachers during the 2020 novel coronavirus pandemic. MIT Teaching Systems Lab.
- Renzulli, L. A., Parrott, H. M., & Beattie, I. R. (2011). Racial Mismatch and School Type: Teacher Satisfaction and Retention in Charter and Traditional Public Schools. *Sociology of Education, 84*(1), 23–48. <https://doi.org/10.1177/0038040710392720>
- Rivkin S., Hanushek E., & Kain J. (2005). Teachers, schools and academic achievement. *Econometrica, 73*, 417-458. <https://doi.org/10.1111/j.1468-0262.2005.00584.x>
- Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Educational Research Journal, 50*(1), 4-36. <https://doi.org/10.3102/0002831212463813>
- Roth, G., Assor, A., Kanat-Maymon, Y., & Kaplan, H. (2007). Autonomous motivation for teaching: How self-determined teaching may lead to self-determined learning. *Journal of Educational Psychology, 99*(4), 761-774. <https://doi.org/10.1037/0022-0663.99.4.761>
- Russell, D. W., Altmaier, E., & Van Velzen, D. (1987). Job-related stress, social support, and burnout among classroom teachers. *Journal of Applied Psychology, 72*(2), 269-274. <https://doi.org/10.1037/0021-9010.72.2.269>
- Ryff, C. D., Keyes, C. L. M., & Hughes, D. L. (2003). Status inequalities, perceived discrimination, and eudaimonic well-being: Do the challenges of minority life hone purpose and growth? *Journal of Health and Social Behavior, 44*, 275-291. <https://doi.org/10.2307/1519779>

- Sakharov, M., & Farber, B. A. (1983). *A critical study of burnout in teachers*. In B. A. Farber (Ed.), *Stress and burnout in human service professions*. Pergamon Press.
- Salminen S. (1995). Does pressure from the work community increase risk taking? *Psychological Reports, 77*, 1247-1250. <https://doi.org/10.2466/pr0.1995.77.3f.1247>
- Sammons, P., Day, C., Kington, A., Gu, Q., Stobart, G., & Smees, R. (2007). Exploring variations in teachers' work, lives and their effect on pupils: Key findings and implication from a longitudinal mixed-method study. *British Education Research Journal, 33*(5), 681-701. <https://doi.org/10.1080/01411920701582264>
- Sandilos, L.E., Goble, P., Rimm-Kaufman, S.E., & Pianta, R. (2018). Does professional development reduce the influence of teacher stress on teacher-child interactions in pre-kindergarten classrooms? *Early Childhood Research Quarterly, 42*, 280-290. <https://doi.org/10.1016/j.ecresq.2017.10.009>
- Santiago, P. (2002). Teacher demand and supply. *OECD Education Working Papers, 1*, 1-12. <https://doi.org/10.1787/232506301033>
- Schaufeli, W.B., & Bakker, A.B. (2004). Job demands, job resources and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior, 25*, 293-315. <https://doi.org/10.1002/job.248>
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement, 66*(4), 701-716. <https://doi.org/10.1177/0013164405282471>
- Schaufeli, W.B., Bakker, A.B., & Van Rhenen, W. (2008). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior, 30*, 893-917. <https://doi.org/10.1002/job/595>
- Scheier, M. F., & Carver, C. S. (1992). Effects of optimism on psychological and physical well-being: Theoretical overview and empirical update. *Cognitive Therapy and Research, 16*(2), 201-228. <https://doi.org/10.1007/BF01173489>
- Scheier, M. F., & Carver, C. S. (2003). Self-regulatory processes and responses to health threats: Effects of optimism on well-being. In J. Suls & K.A. Wallston (Eds.), *Social psychological foundations of health and illness* (pp. 395-428). Blackwell.
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the life

- orientation test. *Journal of Personality and Social Psychology*, 67, 1063-1078.
<https://doi.org/10.1037/0022-3514.67.6.1063>
- Scheopner, A. J. (2010). Irreconcilable differences: Teacher attrition in public and catholic schools. *Educational Research Review*, 5(3), 261-277.
<https://doi.org/10.1016/j.edurev.2010.03.001>
- Schwarzer, R., & Hallum, S. (2008). Perceived teacher self-efficacy as a predictor of job stress and burnout: Mediation analyses. *Applied Psychology*, 57(1), 152-171.
<https://doi.org/10.1111/j.1464-0597.2008.00359.x>
- Secules, S., McCall, C., Mejia, J. A., Beebe, C., Masters, A. S., L. Sánchez-Peña, M., & Svyantek, M. (2021). Positionality practices and dimensions of impact on equity research: A collaborative inquiry and call to the community. *Journal of Engineering Education*, 110(1), 19-43.
- Sesen, H., & Basim, N.H. (2012) Impact of satisfaction and commitment on teachers' organizational citizenship, *Educational Psychology*, 32(4), 475-491. <https://doi.org/10.1080/01443410.2012.670900>
- Shernoff, E. S., Mehta, T. G., Atkins, M. S., Torf, R., & Spencer, J. (2011). A qualitative study of the sources and impact of stress among urban teachers. *Mental Health*, 3(2), 59-69.
<https://doi.org/10.1007/s12310-011-9051-z>
- Shepherd, A., Sanders, C., Doyle, M., & Shaw, J. (2015). Using social media for support and feedback by mental health service users: thematic analysis of a twitter conversation. *BMC Psychiatry*, 15(1). <https://doi.org/10.1186/s12888-015-0408-y>
- Shimazu, A., Schaufeli, W. B., Kosugi, S., Suzuki, A., Nashiwa, H., Kato, A., Sakamoto, M., Irimajiri, H., Amano, S., Hirohata, K., Goto, R., & Kitaoka-Higashiguchi, K. (2008). Work engagement in Japan: Validation of the Japanese version of the Utrecht Work Engagement Scale. *Applied Psychology*, 57(3), 510-523.
<https://doi.org/10.1111/j.1464-0597.2008.00333.x>
- Simbula, S., Panari, C., Guglielmi, D., & Fraccaroli, F. (2012). Teachers' well-being and effectiveness: The role of the interplay between job demands and resources. *Procedia Social and Behavioral Sciences*, 69, 729-738.
<https://doi.org/10.1016/j.sbspro.2012.11.467>

- Simbula S., & Guglielmi D. (2013). I am engaged, I feel good, and I go the extra-mile: Reciprocal relationships between work engagement and consequences. *Journal of Work and Organizational Psychology*, 29, 117-125. <https://doi.org/10.5093/tr2013a17>
- Simon, N., & Johnson, S. M. (2015). Teacher turnover in high-poverty schools: What we know and can do. *Teachers College Record*, 117(3), 1–35.
- Skaalvik, E. M., & Skaalvik, S. (2007). Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout. *Journal of Educational Psychology*, 99, 611- 625. <http://doi.org/10.1037/0022-0663.99.3.611>
- Skaalvik, E. M., & Skaalvik S. (2009). Does school context matter? Relations with teacher burnout and job satisfaction. *Teaching and Teacher Education*, 25, 518-524. <https://doi.org/10.1016/j.tate.2008.12.006>
- Skaalvik, E. M., & Skaalvik S. (2010). Teacher self-efficacy and teacher burnout: A study of relations. *Teaching and Teacher Education*, 26, 1059-1069. <https://doi.org/10.1016/j.tate.2009.11.001>
- Skaalvik, E. M., & Skaalvik, S. (2011). Teacher job satisfaction and motivation to leave the teaching profession: Relations with school context, feeling of belonging, and emotional exhaustion. *Teaching and Teacher Education*, 27, 1029- 1038. <http://doi.org/10.1016/j.tate.2011.04.001>
- Skaalvik, E. M., & Skaalvik, S. (2014). Teacher self-efficacy and perceived autonomy: Relations with teacher engagement, job satisfaction, and emotional exhaustion. *Psychological Reports*, 114(1), 68-77. <https://doi.org/10.2466/14.02.PR0.114k14w0>
- Skaalvik, E. M., & Skaalvik, S. (2015). Job satisfaction, stress and coping strategies in the teaching profession—What do teachers say? *International Education Studies*, 8(3), 181-192. <https://doi.org/10.5539/ies.v8n3p181>.
- Skaalvik, E. M., & Skaalvik, S. (2018). Job demands and job resources as predictors of teacher motivation and well-being. *Social Psychology of Education*, 21(5), 1251-1275. <https://doi.org/10.1007/s11218-018-9464-8>
- Soper, D.S. (2020). *A-priori sample size calculator for multiple regression* [Software]. <http://www.danielsoper.com/statcalc>

- Spear, M., Gould, K., & Lee, B. (2000). *Who would be a teacher? A review of factors motivating and de-motivating prospective and practising teachers*. National Foundation for Educational Research.
- Spencer, T. D., Detrich, R., & Slocum, T. A. (2012). Evidence-based practice: A framework for making effective decisions. *Education & Treatment of Children, 35*, 127-151.
<http://doi.org/10.1353/etc.2012.0013>
- Stewart, B. (2016). Twitter as a method: Using Twitter as a tool to conduct research. In L. Sloan & A. Quan-Haase (Eds.), *The SAGE Handbook of Social Media Research Methods* (pp. 251-265). SAGE Publications. <http://doi.org/10.4135/9781473983847>
- Sumsion, J. (2003). “Bad days don’t kill you; They just make you stronger”: A case study of an early childhood educator’s resilience. *International Journal of Early Years Education, 11*(2), 141-154. <https://doi.org/10.1080/09669760304706>
- Swaminathan, S., & Jawahar, P. D. (2013). Job satisfaction as a predictor of organizational citizenship behavior: An empirical study. *Global Journal of Business Research, 7*(1), 71-80.
- Stazyk, E.C., & Goerdel H.T. (2011). The benefits of bureaucracy: Public managers’ perceptions of political support, goal ambiguity, and organizational effectiveness. *Journal of Public Administration Research and Theory, 21*(4), 645-672.
<https://doi.org/10.1093/jopart/muq047>
- Stuit, D. A., & Smith, T. M. (2012). Explaining the gap in charter and traditional public school teacher turnover rates. *Economics of Education Review, 31*(2), 268–279.
<https://doi.org/10.1016/j.econedurev.2011.09.007>
- Travers, C. J., & Cooper, C. L. (1993). Mental health, job satisfaction, and occupational stress, among UK teachers, *Work & Stress, 7*(3), 203-219. <https://doi.org/10.1080/02678379308257062>
- Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*, 783-805.
[https://doi.org/10.1016/S0742-051X\(01\)00036-1](https://doi.org/10.1016/S0742-051X(01)00036-1)
- Tschannen-Moran, M., & Hoy, A. W. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education, 23*(6), 944–956.
<https://doi.org/10.1016/j.tate.2006.05.003>

- Tschannen-Moran, M., Hoy, A. W., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research Summer*, 68(2), 202-248.
<https://doi.org/10.3102/00346543068002202>
- Thornton, L., Batterham, P. J., Fassnacht, D. B., Kay-Lambkin, F., Calear, A. L., & Hunt, S. (2016). Recruiting for health, medical or psychosocial research using Facebook: Systematic review. *Internet Interventions*, 4, 72-81.
<https://doi.org/10.1016/j.invent.2016.02.001>
- Timms, C., Graham, D., & Cottrell, D. (2007). "I just want to teach": Queensland independent school teachers and their workload. *Journal of Educational Administration*, 45(5), 569-586. <https://doi.org/10.1108/09578230710778204>
- Turnley, W., & Feldman, D. (2000). Re-examining the effects of psychological contract violations: unmet expectations and job dissatisfaction as mediators. *Journal of Organizational Behavior*, 21(1), 25-42.
[https://doi.org/10.1002/\(SICI\)1099-1379\(200002\)21:1<25::AID-JOB2>3.0.CO;2-Z](https://doi.org/10.1002/(SICI)1099-1379(200002)21:1<25::AID-JOB2>3.0.CO;2-Z)
- Uludag, O., & Yaratana, H. (2013). The effects of justice and burnout on achievement: An empirical investigation of university students. *Croatian Journal of Education*, 15(2), 97-116.
- Vaezi, S., & Fallah, N. (2011). The relationship between self-efficacy and stress among Iranian EFL teachers. *Journal of Language Teaching and Research*, 2(5), 1168-1174.
<https://doi.org/10.4304/jltr.2.5.1168-1174>
- van Horn, J. E., Taris, T. W., Schaufeli, W. B., & Schreurs, P. J. G. (2004). The structure of occupational well-being: A study among Dutch teachers. *Journal of Occupational and Organizational Psychology*, 77, 365-375. <http://doi.org/10.1348/0963179041752718>
- Van Wingerden, J., & Poell, R. F. (2019). Meaningful work and resilience among teachers: The mediating role of work engagement and job crafting. *PLoS ONE*, 14(9).
<https://doi.org/10.1371/journal.pone.0222518>
- Vieira, L. S., & Jesus, S. N. (2007). A felicidade nos professores como expressão de saúde [Teachers happiness as an expression of health]. In M. Siqueira, S. N. Jesus, & V. Oliveira (Eds.), *Psicologia da Saúde: Teoria e pesquisa* (pp. 259-285). São Paulo, Brasil: Universidade Metodista.

- Verlet, D., & Devos, C. (2007). *Policies for Happiness*. International Conference Organized by the University of Siena. Belgium.
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.565.2657&rep=rep1&type=pdf>
- Viel-Ruma, K., Houchins, D., Jolivette, K., & Benson, G. (2010). Efficacy beliefs of special educators: the relationships among collective efficacy, teacher self-efficacy, and job satisfaction. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, 33(3), 225-233.
<https://doi.org/10.1177/0888406409360129>
- Wagner, B., & French, L. (2010). Motivation, work satisfaction, and teacher change among early childhood teachers. *Journal of Research in Childhood Education*, 24, 152-171.
<https://doi.org/10.1080/02568541003635268>
- Waight, J., & Madera, J.M. (2011). Diversity training: Examining minority employees' organizational attitudes. *Worldwide Hospitality and Tourism Themes*, 3(1), 365-376.
<https://doi.org/10.1177/1096348016654973>
- Wang, X.H., & Berman, E. (2011) Hypotheses about performance measurement in counties: Findings from a survey. *Journal of Public Administration Research and Theory*, 11(3), 403-428. <https://doi.org/10.1093/oxfordjournals.jpart.a003508>
- Wentzel, K. R. (2013). Students' relationships with teachers. In J.L. Meece, & J.S. Eccles (Eds.), *Handbook of research on schools, schooling and human development* (pp.75-91). Routledge. <https://doi.org/10.4324/9780203874844.ch6>
- Wesely, P. M. (2013). Investigating the community of practice of world language educators on Twitter. *Journal of Teacher Education*, 64(4), 305-318.
<https://doi.org/10.1177/0022487113489032>
- Wilson, D., Mutero, C., Doolabh, A., & Herzstein, M., (1990). Type A behaviour and self-reported stress among Zimbabwean teachers, *Journal of Social Psychology*, 130(1), 115-116. <https://doi.org/10.1080/00224545.1990.9922941>
- Wolters, C.A. & Daugherty, S.G. (2007). Goal structures and teachers' sense of self-efficacy: Their relation and association to teaching experience and academic level. *Journal of Educational Psychology*, 99, 181-193. <http://doi.org/10.1037/0022-0663.99.1.181>
- Worrall, N., & May, D. (1989). Towards a person-in-situation model of teacher stress. *British Journal of Educational Psychology*, 59(2) 174-186.

- <https://doi.org/10.1111/j.2044-8279.1989.tb03089.x>
- Wright, N. (2010). Twittering in teacher education: Reflecting on practicum experiences. *Open Learning: The Journal of Open, Distance and e-Learning*, 25(3), 259-265.
<https://doi.org/10.1080/02680513.2010.512102>
- Wynn, S.R., Carboni, L.W., & Patall, E.A. (2007). Beginning teachers' perceptions of mentoring, climate and leadership: promoting retention through a learning communities perspective. *Leadership and Policy in Schools*, 6, 209-229.
<https://doi.org/10.1080/15700760701263790>
- Xanthopoulou, D., Bakker, A.B., Demerouti, E., & Schaufeli, W.B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management*, 14, 121-141. <https://doi.org/10.1037/1072-5245.14.2.121>
- Xiaofu, P., & Qiwen, Q. (2007). An analysis of the relation between secondary school organizational climate and teacher job satisfaction. *Chinese Education & Society*, 40(5), 65-77. <https://doi.org/10.2753/CED1061-1932400507>
- Yang, K., & Pandey, S. K. (2009). How do perceived political environment and administrative reform affect employee commitment? *Journal of Public Administration Research and Theory*, 19(2), 335-360. <https://doi.org/10.1093/jopart/mun002>
- Yi-wen, Z., & Yi-qun, C. (2005). The Chinese version of Utrecht Work Engagement Scale: An examination of reliability and validity. *Chinese Journal of Clinical Psychology*, 13(3), 268-270.
- Yonezawa, S., Jones, M., & Singer, N. R. (2011). Teacher resilience in urban schools: The importance of technical knowledge, professional community, and leadership opportunities. *Urban Education*, 46(5), 913-931.
<https://doi.org/10.1177/0042085911400341>
- Yoon, J. S. (2002). Teacher characteristics as predictors of teacher-student relationships: Stress, negative affect, and self-efficacy. *Social Behavior and Personality*, 30, 485-493.
<https://doi.org/10.2224/sbp.2002.30.5.485>
- Yost, D.S. (2006). Reflection and self-efficacy: Enhancing the retention of qualified teachers from a teacher education perspective. *Teacher Education Quarterly*, 33(4), 59-76.
- Zee, M., & Koomen, H. M. Y. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years

of research. *Review of Educational Research*, 86(4), 981-1015.

<https://doi.org/10.3102/0034654315626801>

Zohar, D. (1980). Safety climate in industrial organizations: theoretical and applied implications.

The Journal of Applied Psychology, 65(1), 96-102.

<https://doi.org/10.1037/0021-9010.65.1.96>

Zohar, D. (2002). Modifying supervisory practices to improve subunit safety: a leadership-based intervention model. *Journal of Applied Psychology*, 87, 156-163.

<https://doi.org/10.1037/0021-9010.87.1.156>