

Title: The Influence of Adverse Classroom and School Experiences on First Year Teachers' Mental Health and Career Optimism

Authors: Leigh McLean, Tashia Abry, Michelle Taylor, Larissa Gaias

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## The Influence of Adverse Classroom and School Experiences on First Year Teachers' Mental Health and Career Optimism

The teaching profession is internationally recognized as highly demanding (Johnson et al., 2005; Travers, 2001), evidenced in the high prevalence of stress, fatigue, and burnout reported by teachers from multiple countries (Katz, Greenberg, Jennings, & Klein, 2016; Steinhardt, Smith-Jaggars, Faulk, & Gloria, 2011; Wang, Hall, & Rahimi, 2015). The early-career stage in particular has been identified as a vulnerable time marked by challenges with negative mental and physical health symptomatology (Authors, 2017b; Wang et al., 2015), dampened self-efficacy (Wang et al., 2015), and a sense of disillusionment about the profession (Goldstein, 2005). These factors likely contribute to teachers' decisions to leave the profession. Indeed, the high rates of attrition observed among early-career teachers, while difficult to estimate with precision (Wheldon, 2018), have garnered increased international attention in the past decade (Beltman, Mansfield, & Price, 2011; Borman & Dowling, 2008; Gallant & Riley, 2014; Sass, Flores, Claeys, & Perez, 2012; Skaalvik & Skaalvik, 2011; 2016; Struyven & Vanthournout, 2014).

Teacher attrition in the U.S., in particular, has been shown to be higher than in other countries such as Germany, France, Hong Kong, and Sweden (Cooper & Alvarado, 2006; Ingersoll, 2003; Karsenti & Collin, 2013; McKenzie, Santiago, Sliwka, & Hiroyuki, 2005). This is concerning given the negative implications of high teacher turnover including dampened student academic achievement (Milanowski & Odden, 2007), a shortage of professionals to meet U.S. teaching demands (Ingersoll, 2003), and a steep economic toll of teacher attrition on the nation's education system (Carroll, Reichardt, & Guarino, 2000; Texas Center for Educational Research, 2000). Considering the differences observed between countries in rates of teacher

attrition along with the fact that teachers' experiences can also vary greatly across countries (McKenzie et al., 2005), the present study seeks to take a closer look at the experiences of U.S. teachers to reveal potential antecedents that may contribute to attrition in the early-career stage.

### **Theoretical Framework**

We draw from the Job Demands-Resources Model (Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) to frame our investigation. This model is often used in the fields of industrial/organizational and occupational health psychology to describe factors predicting employee engagement, burnout, and job performance. Central to the Job Demands-Resources Model is the division of employees' work-related experiences into two categories: job demands and job resources. These two categories are thought to represent interrelated processes that interact to impact workers' outcomes. Job demands include aspects of the work environment that typically deplete the energy of workers, for example workload, emotional strain, and physical demands. Alternately, job resources include aspects of the work environment meant to foster positive employee performance, including opportunities for autonomy, social support, feedback, professional development, and the provision of various material resources. In this model, job resources are generally thought to buffer the negative effects of job demands (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). In relating this model to teachers specifically, studies have illustrated that teachers' job demands including onerous parents and stressful student behaviors, and job resources including personal fulfillment and work satisfaction, are highly relevant to teachers' mental health outcomes (Curbow, McDonnell, Spratt, Griffen & Agnew, 2003; Raskin, Kotake, Easterbrooks, Ebert, & Miller, 2015; Roberts et al., 2019). Although to our knowledge no current research utilizes the Job Demands-Resources Model to investigate teachers' feelings about their career, foundational

studies testing this model (Demerouti et al., 2001) have shown that job demands and resources consistently relate to career burnout among human services employees. In the present study, we examine one job demand, classroom student adversity, and two job resources, school climate and material resources, in their relations to beginning teachers' mental health and career optimism.

Recent work supports the conceptualization of teacher attrition (and more precisely, early-career teacher attrition) as a complex, multifaceted issue that deserves nuanced approaches when studied empirically (Buchanan, Prescott, Schuck, Aubusson & Burke, 2013; Lindqvist, Nordänger, & Carlsson, 2014; Weldon, 2018). The present study aligns with this approach in its concurrent consideration of multiple factors that might affect teachers' mental health and feelings about the profession, purported here as early indicators of attrition, and elaborates on this work by incorporating the Job Demands-Resources model to delineate demands vs. resources and identify how these factors might co-occur and interact. In general, past research has underscored the importance of teachers' perceptions of their professional environment, including their colleagues, students, and school administration (Beltman, Mansfield, & Price, 2011), as influences on their commitment to the profession (Darling-Hammond, 2003; Warner-Griffin, Cunningham & Noel, 2018). More specifically, features of the classroom and students therein (e.g., class size, proportions of at-risk students) have been shown to relate to teachers' job satisfaction (Borman & Kimball, 2005; Ferguson, 1998), as have school features including material resources and experiences with colleagues (Darling-Hammond, 1997; Ingersoll, 2001a, 2001b). Importantly, these and other classroom and school features are especially salient for early-career teachers who often experience a "trial-by-fire" induction into the career, with this group often assigned higher proportions of more challenging students, and fewer material and collegial supports (Gordon & Maxey, 2000; Kalogrides & Loeb, 2013; Kalogrides, Loeb, &

Beteille, 2013). While existing research provides important insights into the challenges faced by novice teachers, the field still lacks an understanding of the roles such challenges play in their mental health and developing career attitudes, including which factors might be experienced more or less immediately by teachers and which might play protective roles in terms of negative teacher outcomes. Results of this inquiry can inform systems of policy, training and support for early-career teachers aimed at promoting positive mental health and career optimism and, ultimately, successful teacher retention.

### **Teachers' Mental Health**

In the present study, we investigate teachers' self-reported symptoms of depression and anxiety as outcomes that may be affected by the classroom and school features (i.e., job demands and resources) they experience during their first year. Depression is considered a dampening of positive affect, with symptoms including prolonged fatigue, feelings of worthlessness, and diminished capacities for engagement (American Psychiatric Association, 2013). Alternately, anxiety is characterized by excessive worry or fear (APA, 2013). Past research has established important linkages between depression and anxiety, with the two conditions often co-occurring (Axelson & Birmaher, 2001; Brady & Kendall, 1992; Cummings, Caporino, & Kendall, 2014). For both depression and anxiety, even the presence of symptoms at non-clinical levels can negatively affect an individual (Allen, Chango, Szvedo, & Schad, 2014).

Multiple studies have illustrated that teachers are especially vulnerable to negative mental health symptoms. As examples, Johnson and colleagues (2005) found that teaching ranked among the top six of 25 professions in levels of chronic, work-related stress, and Whitaker and colleagues (2013) described that teachers report higher rates of negative mental health symptoms than the general population. Notably, issues surrounding mental health may be especially salient

to early-career teachers, as Authors (2017b) reported that symptoms of depression and anxiety increased as new teachers transitioned into their careers.

Negative mental health symptoms have been found to adversely impact teachers' job satisfaction and performance in multiple ways, including through increased absenteeism (Ferguson, Frost, & Hall, 2012; Fernet, Guay, Senecal, & Austin, 2012; Kyriacou, 2001). Additionally, students of teachers with negative mental health symptoms have been shown to experience fewer positive teacher-student interactions (Hamre & Pianta, 2004) and less time in types of instruction facilitated directly by the teacher (Authors, 2018). Moreover, teachers who report more depressive symptoms have been shown to have lower-quality classrooms, and to provide less frequent positive feedback to students (Authors, 2015; 2017c).

### **Teachers' Career Optimism**

We also examine career optimism as an outcome potentially affected by the classroom and school features experienced by beginning teachers. Optimism, defined more generally, is one's beliefs that their own future will be prosperous and favorable (Bryant & Cvengros, 2004; Gallagher & Lopez, 2009; Scheier & Carver, 1985; Snyder et al., 1991). Optimism has been linked to both mental and physical health (Carver, Scheier, & Segerstrom, 2010), with findings regarding mental health suggesting that higher optimism relates to fewer depressive and anxious symptoms (Alcaron, Bowling & Khazon, 2013). However, an important distinction of optimism from mental health characteristics is that it centers around individuals' expectations for the future, rather than their in-the-moment experiences or perceptions and can thus be conceptualized as a unique but related characteristic (Alcaron et al., 2013; Gallagher & Lopez, 2009). Recent studies among both general and teacher populations have reported that intervening on psychological health leads to increases in optimism (Malouff & Schutte, 2017), and identified

optimism as a direct predictor of mental health (Desrumaux, Lapointe, Ntsame Sima, Boudrias, Savoie & Brunet, 2015). We include mental health and career optimism as outcomes of interest in the present study, with career optimism considered as the most direct indicator of potential later teacher attrition.

As an outcome of interest in the present study, career optimism is defined (more specifically than general optimism) as one's expectations of positive career outcomes and comfort in planning their careers (Rottinghaus, Day, & Borgen, 2005). Research supports our conceptualization of career optimism as an indicator of a first-year teachers' likelihood of later attrition (Hong, 2010; Kelly & Northrop, 2015): Across multiple professions, career optimism has been shown to predict an individual's career-related decisions (Chatterjee, Afshan, & Chhetri, 2015). Among teachers, career optimism has been found to play a role in goal-setting behaviors and the establishment of career plans and has been linked to teachers' likelihood of taking on leadership roles within their schools (Creed, Patton, & Bartrum, 2002; Marko & Savickas, 1998).

Career optimism has been studied less among preservice and early-career teachers, but some findings indicate that more optimism for the profession early on relates to higher career engagement later (Eren, 2012; McIlveen & Perera, 2016). Most existing research on predictors of teachers' career optimism has focused on individuals' personal characteristics such as teaching efficacy and personality traits as predictors of their optimism (see Chatterjee, Afshan, & Chhetri, 2015; McIlveen & Perera, 2016). As such, an innovation of this study is our examination of external factors (classroom and school characteristics) as predictors of career optimism among first-year teachers exclusively. In addition, examining a likely indicator of attrition *before* it occurs could provide information on how to identify teachers who may be struggling early on.

## **Classroom and School Influences on Teacher Outcomes**

Classroom student adversity, material resources, and school climate are three features experienced by all beginning teachers that likely have implications for their mental health and career optimism. Because beginning teachers experience these features concurrently, we examine them as simultaneous predictors to ascertain the unique and relative influence of each on our outcomes of interest. Guided by the Job Demands-Resources Model, we conceptualize classroom student adversity as a job demand which we expect will have a strong, direct association with later teacher outcomes. In addition, we view material resources and school climate as job resources that have the potential to both directly influence teacher outcomes and serve as mitigating factors in relations between classroom adversity and teacher mental health and career optimism outcomes (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007).

Classroom student adversity refers to the types and levels of challenging characteristics among students in the class as reported by the teacher (Authors, 2017a). Our measurement of classroom student adversity reflects students' behaviors, performance, and attitudes as reported by the teacher. Students' collective adversity characteristics have been directly linked to lower-quality teaching practices (Authors, 2018), as well as to students' internalizing and externalizing behaviors in elementary settings (Authors, 2017a). Relatedly, students' problematic behaviors have been linked to teacher stress and burnout (Greene et al., 2002; Kokkinos, 2007; Nichols & Sosnowsky, 2002), and are contributing factors in teachers' decisions to leave their positions (Darling-Hammond, 1997). As well, studies tracking patterns of teacher attrition have found that teachers transfer out of schools with high proportions of low-performing students in favor of schools with higher-achieving students (Carroll et al., 2000; Hanushek, Kain, & Rivkin, 2004)



and cite lack of student motivation as a factor contributing to these decisions (Darling-Hammond, 1997).

We also consider the material resources provided to teachers by their schools to utilize in the classroom. These include materials to support learning among specific groups of students, instructional and curricular resources (guides, books, and other supplies), and professional development opportunities. Material resources have primarily been studied in the context of student outcomes, but some research does suggest that material resources can have implications for teachers as well. For example, Gritz and Theobald (1996) found that teachers were less likely to leave their positions if they had access to high-quality teaching materials. Particularly relevant to the present study, Roberts and colleagues (2018) reported that work-related resources were among factors that related to depressive symptoms among teachers.

The third feature we consider is teachers' perceptions of their school's climate. School climate is a widely-recognized contributor to teachers' work-related experiences. For example, Allensworth, Ponisciak, and Mazzeo (2009) reported that school climate accounted for the majority of variance in teacher attrition and mobility across a school year. School climate is also associated with teachers' mental health and related factors including levels of work-related stress (Skaalvik & Skaalvik, 2009) and burnout (Grayson & Alvarez, 2008; Pas, Bradshaw, & Hershfeldt, 2012). Our measurement of school climate reflects the relationships and collaboration among school colleagues, and a school's support for teacher innovation. Prior work has shown that, more so than physical or geographical aspects of a school, these aspects of school climate are the most salient to teacher outcomes including attrition (Burkhauser, 2016; Darling-Hammond, 2003). Importantly, recent work has begun to identify the central role that school climate plays in the early-career stage: In line with the Job Demands-Resources Model's

view of job resources as buffers of negative outcomes, positive school climate was recently shown to protect against worsening mental health symptoms among new teachers (Authors, 2017b).

In addition to investigating the direct effects of each of these features, we investigate the interactions among them in relation to our outcomes. We view classroom student adversity as the focal predictor, and school resources and climate as moderating factors that might either buffer or exacerbate the hypothesized negative effects of more challenging classrooms. Past work in educational settings has revealed similar patterns: Better school-level working conditions have been shown to mitigate attrition rates among teachers grappling with large class sizes and high proportions of low-income and minority students (Loeb, Darling-Hammond, & Luczak, 2005).

### **Study Aims and Hypotheses**

To summarize, the present study addresses the following aims: First, we investigate the extent to which classroom student adversity, school-provided resources, and school climate directly relate to participants' reports of depressive and anxious symptoms and career optimism, and within this model, the relative influence of each indicator. We predict that classroom student adversity, resources, and school climate will each be directly related to symptoms of clinical depression and anxiety and career optimism. We also predict that classroom student adversity will be the strongest relative predictor of each outcome compared to resources and school climate. Second, we investigate the extent to which resources and school climate each interact with classroom student adversity to influence participants' outcomes. We predict that higher satisfaction with resources and more positive school climate will each buffer the hypothesized negative effects of classroom student adversity.

### **Method**

## **Participants**

Undergraduate seniors in a teacher-training program at a public university in the Southwestern United States were recruited to participate in a longitudinal study that followed them from the last year of training through their first year of teaching. In the first cohort, a total of 364 students received email invitations to participate and 133 (36.5%) enrolled. In the second cohort, 337 students were invited and 132 (39%) enrolled leading to a total combined sample of 265 participants. Of these originally recruited participants, 88% were female, 70% were Caucasian, 19% were Hispanic/Latino, 3% were Asian or Pacific Islander, 3% were African American, and 4% reported another race. Age of participants ranged from 21 to 50 years with a mean of 24 years, with the majority of the sample under 33 years of age.

As the goal of the present study was to investigate the outcomes of first-year teachers, only those participants from the originally recruited sample who reported transitioning into a teaching position were included in the analytic sample for the present study ( $N = 133$ ). All participants in the analytic sample reported obtaining positions in U.S. K-8<sup>th</sup> grade classrooms. Demographics closely matched what was observed in the recruited sample, with the exceptions that the analytic sample had a higher proportion of females (95% compared to 88%) and a slightly lower percentage of African Americans (1% compared to 3%). T-tests comparing the analytic sample to the recruited sample showed no significant differences between groups on any study variables.

## **Procedures**

Email invitations were sent to all senior students who were enrolled in the undergraduate program, with majors including early childhood education, elementary education, or special education. Two sequential cohorts were recruited: the first cohort was recruited during the fall of

the 2011-2012 academic year and became teachers in the 2012-2013 year, and the second cohort was recruited during the fall of the 2012-2013 year and became teachers in the 2013-2014 year. Both cohorts followed the same data collection schedule, but were one year apart. Three time points are considered in the present study which capture each cohort's transition from the end of their undergraduate training through their first year of teaching. The first time-point (T1) occurred in the spring of participants' last year of training, the second (T2) occurred in the fall of their first year of teaching, and the third (T3) occurred in the spring of their first year of teaching. At each time point, participants were emailed an online survey link and were given two weeks to complete a battery of surveys inquiring about their training/teaching experiences. Of the 133 participants in the analytic sample, 116 (87%) responded to the T1 survey, 107 responded to the T2 survey (80%) and 90 responded to the T3 survey (67.6%). A total of 90 participants were responsive across all three time points, and the remaining 43 participants either didn't respond to the T2 and/or T3 surveys (all of these 43 participants responded to the T1 survey). T-tests comparing the 90 completely responsive participants to the 43 partially-responsive participants revealed no significant differences on any study variables.

## **Measures**

### **Dependent Variables.**

***Depressive Symptoms.*** Participants completed the 10-item version of the Center for Epidemiologic Studies Depression Scale (CESD-10; Radloff, 1977) at T1 and T3. Participants rated the frequency with which they had experienced ten symptoms associated with clinical depression in the past week. Statements were rated on a 4-point scale (1 = *rarely or none of the time*; 4 = *most or all of the time*), and included questions such as "In the past week I was bothered by things that usually don't bother me" and "In the past week I felt I could not get

going.” The CESD-10 is a well-validated and reliable measure of depressive symptomatology in the general population (Roberts, 1980; Orme, Reis & Herz; 1986) that has also been used successfully among teacher samples (Authors, 2015; 2017b; 2017c; Roberts et al., 2016). Scores were averaged, with higher scores indicating more depressive symptoms. This measure showed high internal consistency within the present study with Cronbach’s alpha estimates of .81 for T1 and .78 for T3.

***Anxious Symptoms.*** Participants completed the 7-item Generalized Anxiety Disorder Scale (GAD-7; Spitzer, Kroenke & Williams, 2006) at T1 and T3. Users are instructed to “tell us how often you behaved or felt this way during the past two weeks” and these instructions are followed by seven statements describing individual symptoms including “not being able to stop or control worrying” and “becoming easily annoyed or irritable.” Each statement is rated by users on a 4-point scale ranging from 1 (*not at all*) to 4 (*nearly every day*). Scores were averaged, with higher scores indicating more anxious symptoms. This measure showed strong internal consistency within the present study with Cronbach’s alpha estimates of .94 for T1 and .93 for T3.

***Career Optimism.*** Participants completed the 11-item Career Optimism subscale of the Career Futures Inventory (Rottinghaus, Day & Borgen, 2005) at T1 and T3. Users were instructed to “read each statement below and choose how much you agree or disagree with whether this describes how you feel about your teaching career right now.” The statements following these instructions included both positive sentiments such as, “I get excited when I think about my teaching career,” as well as negative statements such as, “It is difficult for me to set teaching career goals.” Each statement was rated on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Negatively-worded statements were reverse-coded prior to

scoring. Scores were averaged, with higher scores indicating more optimism for the teaching career. This scale showed high reliability in the present study with Cronbach's alpha estimates of .89 for T1 and .88 for T3.

### **Independent Variables.**

***Classroom Student Adversity.*** At T2, participants completed a 14-item scale developed by investigators for use in the present study called the Classroom Environment Student Difficulties Scale (Authors, 2019). Participants were instructed to indicate on a 4-point scale the percentage of students in their classroom who present adverse characteristics such as tardiness, absenteeism, apathy (i.e., lack of interest in school), poor health, difficulty paying attention, lack of self-control (i.e., disruptive behavior), peer rejection, and aggression. A rating of 1 indicated that 0 to 25% of students in the classroom presented a given characteristic, a rating of 2 indicated 26% to 50% presented that characteristic, a rating of 3 indicated that 51% to 75% of students presented that characteristic, and a rating of 4 indicated that 76% to 100% of students presented that characteristic. Since this measure was newly developed by investigators, Exploratory Factor Analysis (EFA) with Maximum Likelihood estimation was performed to ascertain whether all items loaded onto a single factor representing overall classroom adversity. Results of the EFA indicated that 12 of the 14 items loaded strongly onto a single factor with loadings ranging from .63 to .84 (the majority of these loadings were above .70). The remaining two items were evenly cross-loaded onto the first factor and a second factor, though the first factor accounted for the vast majority of the variance in the scale. As such, we determined that items could be reliably combined to represent overall classroom student adversity. Scores were averaged, with higher scores indicating higher levels of collective student adversity characteristics in the classroom.

This measure displayed high internal consistency in the present study with a Cronbach's alpha estimate of .93.

**Material Resources.** Participants completed the 30-item Resources portion of the Classroom Appraisal of Resources and Demands scale (CARD, McCarthy et al., 2001) at T2. Teachers rated the helpfulness of various materials on a scale of 1 (*very unhelpful*) to 5 (*very helpful*). In the present study, we included only the 21 items on the CARD directly pertaining to physical classroom materials in our measurement of satisfaction with resources. The remaining 9 items asked teachers to rate the helpfulness of their colleagues, mentors, and assistants, factors which were of central focus in our measurement of school climate and thus were excluded to avoid the confounding of the resources and school climate variables. All items were reversed prior to scoring such that higher scores indicated more dissatisfaction with resources, and reversed scores were averaged. The 21 items utilized in the present study displayed high internal consistency with a Cronbach's alpha estimate of .95.

**School Climate.** Participants completed a 30-item adapted version of the Consortium on Chicago School Research (CSSR; Sartain, Stoelinga, & Brown, 2011) Teacher Survey at T3. The adapted survey used in the present study captures teachers' impressions of the relationships among school colleagues and the extent to which collaboration and innovation among teachers is supported within a school, school features which have been previously found to be highly salient to teachers' mental health and career-related outcomes (Allensworth, Ponisciak, & Mazzeo, 2009; Burkhauser, 2016). Questions targeting the relationships among colleagues include "To what extent to you feel respected by other teachers?", and questions targeting teachers' collaboration and innovation include "To what extent do the principal, teachers and staff collaborate to make this school run effectively?" Participants rated each item on a 5-point scale,

with 1 indicating *not at all* and 5 indicating *a great extent*. All items were reversed prior to scoring and reversed scores were averaged, with higher scores indicating poorer school climate. This adapted measure displayed high internal consistency in the present study with a Cronbach's alpha estimate of .96.

### **Covariates.**

***Perceived Social Support.*** Participants completed the 20-item Multidimensional Scale of Perceived Social Support (MSPSS; Edwards, 2004) at T3, which captured the extent to which one feels they are supported by family, friends, and community-based groups. This covariate was included in analyses to parse out the social support a teacher might receive from their school colleagues from the support they alternately receive from those outside of the school environment. Participants rated how strongly they agreed with given statements on a 7-point scale ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). Example items included "My family really tries to help me," and "I can count on my friends when things go wrong." Scores were averaged, with higher scores indicating greater perceived social support. This scale showed high internal consistency within the present sample, with a Cronbach's alpha estimate of .90.

***Cohort Belonging.*** Cohort belonging was dummy coded; participants in the first cohort were coded as '0', and participants in the second cohort were coded as '1'.

***Age Taught.*** Three dummy codes were created to represent the age of students teachers reported teaching upon their transition into their careers. Teachers who taught kindergarten through third grade were assigned a "1" in the "early childhood" dummy variable while all other teachers were assigned a "0". Teachers who taught fourth or fifth grade were assigned a "1" in the "middle childhood" dummy variable while all other teachers were assigned a "0". Teachers



who taught sixth to eighth grade were assigned a “1” for the “later childhood” dummy variable while all other teachers were assigned a “0”. The dummy coded variables for early and middle childhood were included as the covariates in all models, which left the later childhood variable as a natural reference group.

### **Analytic Approach**

We examined descriptive statistics to assess normality of variables and zero-order correlations to examine associations between variables. We then conducted path models using the program MPlus (Version 7; Muthen & Muthen, 2012) to investigate study aims. We first tested a covariates model which included only cohort belonging, the two focal age taught variables, perceived social support, and the T1 measurement of each outcome as predictors of the three outcomes, which were modeled simultaneously and allowed to covary. Next, we introduced the three primary predictors along with the covariates in a main-effects model. Last, we tested an interactions models that included the two interaction effects (classroom student adversity-by-resources and classroom student adversity-by-school climate) as additional predictors.

All continuous predictors were grand-mean centered, and the grand-mean centered predictors were used to create the interaction terms. As stated above, higher scores on each of the predictors represented more negative teacher experiences. *R*-squared estimates for each of these models were used to ascertain the amounts of variance accounted for by the covariates, by the primary predictors, and by the interaction terms. Missing data were handled using the Full Information Maximum Likelihood (FIML) estimation method, which minimizes bias in parameter estimates but retains the full analytic sample size (Enders, 2010). FIML is regarded by methodologists as a state-of-the-art approach that is especially appropriate in cases where there are non-negligible amounts of missing data present among a smaller sample size and when data

are assumed to be missing at random (MAR; Schafer & Graham, 2002). Our modeling of covariates potentially correlated with missingness (e.g., perceived social support, grade level taught, cohort) and non-significant differences on study variables between teachers with complete and missing data strengthen our assumption of MAR in further support of our use of FIML. We assessed model fit using the Comparative Fit Index (CFI; ideal = 1), the Root Mean Square Error of Approximation (adequate estimates below .10, ideal estimates below .05) the Standardized Root Mean Square Residual (ideal < .08), and the Chi-Square test ( $\chi^2$ ; smaller values ideal; Hu & Bentler, 1999). The relative strength of influence of predictors on outcomes was assessed by examining the standardized coefficients for each predictor in the path models. Standardized coefficients provide estimates of an effect relative to other included predictors, and effects can be compared to draw conclusions about the relative strength of one effect compared to others. A larger standardized coefficient of one predictor over others suggests that predictor has a larger relative influence on the outcome.

## **Results**

### **Descriptive Statistics and Bivariate Correlations**

See Table 1 for descriptive information. Estimations of skewness and kurtosis fell within acceptable ranges (skewness < 2, kurtosis < 7; Fidell and Tabachnick, 2003), suggesting no severe departures from normality. Mean levels of outcomes indicated that participants reported more depressive and anxious symptoms at T3 compared to T1, and lower career optimism at T3 compared to T1. Participants reported moderate levels of classroom adversity, poor school climate, and dissatisfaction with resources, as well as moderate amounts of social support. T-tests revealed no significant differences between cohorts on any T1 or T2 measures, but did

reveal differences between cohorts on T3 depressive ( $t(85) = -4.51, p < .001$ ) and anxious ( $t(88) = -2.81, p = .006$ ) symptoms.

Bivariate correlations (see Table 2) revealed moderately-sized, positive associations between classroom student adversity, dissatisfaction with school-provided resources, and poor school climate and T3 depression and anxiety, as well as moderately-sized negative relations between each of these primary predictors and T3 career optimism. Perceived social support showed moderately-sized negative relations with both T3 depression and anxiety, and a moderately-sized positive relation with T3 career optimism. T1 reports of depression, anxiety and career optimism were all moderately, positively related to their corresponding T3 reports.

### **Path Models**

*Covariates Model.* Cohort belonging, grade taught, perceived social support, and the T1 measurement of each outcome were modeled as predictors of participants' T3 depressive symptoms, anxious symptoms, and career optimism (see Table 3). This model showed moderate fit to the data ( $\chi^2(11) = 26.03, p = .01$ ; CFI = .92; RMSEA = .09; SRMR = .06), and revealed significant associations between T1 depression and T3 depression ( $B = .22, p < .01$ ;  $\beta = .22$ ), between T1 anxiety and T3 anxiety ( $B = .31, p < .01$ ;  $\beta = .33$ ), and between T1 career optimism and T3 career optimism ( $B = .33, p < .01$ ;  $\beta = .32$ ). In addition, cohort belonging was associated with T3 depressive ( $B = .42, p < .01$ ;  $\beta = .37$ ) and anxious ( $B = .43, p < .01$ ;  $\beta = .27$ ) symptoms. Perceived social support was related to all outcomes ( $B = -.20, p < .01$ ;  $\beta = -.37$  for depressive symptoms;  $B = -.27, p < .01$ ;  $\beta = -.36$  for anxious symptoms;  $B = .29, p < .01$ ;  $\beta = .41$  for career optimism). Finally, teaching middle-elementary students was negatively related to T3 career optimism ( $B = -.48, p < .05$ ;  $\beta = -.29$ ). *R*-squared estimates for the covariates model were .33 for depressive symptoms, .32 for anxious symptoms, and .33 for career optimism, indicating that

these covariates collectively accounted for 33%, 32%, and 33% of the variance in these outcomes, respectively.

**Main Effects Model.** We then added classroom student adversity, school-provided resources, and school climate as predictors of participants' T3 depression, anxiety, and career optimism along with the covariates (see Table 3). This model showed good fit to the data ( $\chi^2(14) = 20.04, p = .17$ ; CFI = .98; RMSEA = .05; SRMR = .04), and revealed a main effect of classroom student adversity on T3 depressive symptoms ( $B = .38, p < .01$ ;  $\beta = .39$ ) and of school climate on all outcomes ( $B = .21, p = .04$ ;  $\beta = .22$  for depressive symptoms;  $B = .34, p = .02$ ;  $\beta = .26$  for anxious symptoms;  $B = -.34, p = .01$ ;  $\beta = -.28$  for career optimism). After the addition of the main effects, the relation detected between teaching middle-childhood students and career optimism became insignificant. *R*-squared estimates for the main effects model were .59 for depressive symptoms, .49 for anxious symptoms, and .50 for career optimism. The change in *R*-squared estimates from the covariate model suggested that the additions of classroom student adversity, school-provided resources, and school climate as predictors accounted for an additional 26% of the variance in depressive symptoms, 17% of the variance in anxious symptoms, and 17% of the variance in career optimism.

**Interactions Model.** We then added two interaction terms as additional predictors of participants' T3 depression, anxiety, and career optimism, one the product of classroom student adversity and material resources and the other the product of classroom student adversity and school climate (see Table 3). This model fit the data well ( $\chi^2(16) = 25.86, p = .07$ ; CFI = .96; RMSEA = .06; SRMR = .04), and revealed significant classroom adversity-by-resources interaction effects on T3 depressive symptoms (see Figure 1;  $B = -.43, p = .03$ ;  $\beta = -.29$ ) and T3 anxious symptoms (see Figure 2;  $B = -.53, p = .03$ ;  $\beta = -.25$ ). Tests of simple slopes of the

classroom adversity-by-resources interactions indicated that positive relations between classroom student adversity and both depressive and anxious symptoms were present and significant at good (-1 SD) and average, but not poor (+1 SD), levels of satisfaction with material resources.

In addition, this model revealed a significant classroom adversity-by-school climate interaction effect on T3 anxious symptoms ( $B = .57, p = .05; \beta = .23$ ). Tests of simple slopes for the classroom adversity-by-school climate interaction revealed that positive relations between classroom adversity and anxious symptoms were present and significant at average and poor (+1 SD) perceptions school climate, but not at good (-1 SD) perceptions of school climate.

*R*-squared estimates for the interactions model were .64 for depressive symptoms, .56 for anxious symptoms, and .61 for career optimism. The change in *R*-squared estimates from the main effects model suggested that the inclusion of the interaction terms accounted for an additional 5% of the variance in depressive symptoms, an additional 7% of the variance in anxious symptoms, and an additional 11% of the variance in career optimism.

## **Discussion**

A growing body of research suggests that the first years of teaching are a sensitive period in which practitioners' mental health and likelihood of remaining in the profession are vulnerable (Authors, 2017b, Gallant & Riley, 2014; Skaalvik & Skaalvik, 2011; 2016). However, the field still lacks a clear understanding of which experiences are most salient to teachers' outcomes, how these factors might interact, and their implications for beginning teachers specifically. The present study contributes new knowledge by investigating how classroom student adversity, material resources, and school climate relate to first-year teachers' mental health and career optimism, and by providing information on the unique, relative, and interactive influences of these features. We predicted that higher levels of classroom student adversity, more

dissatisfaction with material resources, and poorer perceived school climate would each be directly related to more symptoms of clinical depression and anxiety and to lower career optimism at the end of the first year of teaching. Guided by the Job Demands-Resources Model (Bakker & Demerouti, 2007; Demerouti et al., 2001), we further predicted that classroom student adversity, conceptualized as a job demand, would show a stronger relation to each of the outcomes compared material resources and school climate. Lastly, we predicted that moderating relations would exist such that material resources and school climate, conceptualized as job resources, would either protect against or exacerbate the negative influences of higher classroom student adversity.

### **Direct Effects of Classroom Stress, School Climate, and Material Resources**

Our hypothesized direct effects were partially supported: Classroom student adversity was positively related to depressive symptoms after accounting for material resources, climate, and other covariates. It also showed a marginally significant positive relation to anxious symptoms (see Table 3), although due to the limitations of the present study we are hesitant to interpret this finding formally. Classroom student adversity was not related to career optimism, and this was contrary to our hypotheses. School climate was found to directly relate to all three outcomes, with poorer perceived school climate related to more symptoms of depression and anxiety and to less career optimism. Lastly, dissatisfaction with material resources was not directly related to any of the outcomes. Regarding the relative strength of these effects, our predictions were partially supported in the case of participants' depressive symptoms: Classroom student adversity had the strongest relative influence on depressive symptoms compared to resources and school climate. These patterns align well with recent research showing that external career stressors including lower wages, lack of health insurance, and more workplace

demands are related to more depressive symptoms among teachers (Roberts, et al., 2019). Our findings elaborate on this and similar studies (Curbow, McDonnell, Spratt, Griffin & Agnew, 2003; Raskin, Kotake, Easterbrooks, Ebert & Miller, 2015) that have made connections between workplace demands and resources and teachers' mental health outcomes by considering contextual factors (classroom stress and school climate) in addition to material supports, and by relating these factors to a wider range of teacher outcomes. Specifically, our findings suggest that while classroom student adversity may have a stronger relative influence on some teacher outcomes, school climate may be a wider-reaching factor that permeates more facets of teacher experience. These findings also suggest that job demands, in this case the stress experienced by teachers in the classroom, may have more immediate implications for teachers' depressive symptoms than do job resources, although this will need to be confirmed in future research.

### **Interaction Effects**

Findings regarding the interactions among predictors were also mixed. Regarding material resources, while we predicted that having abundant resources would serve as a protective factor for teachers (see Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007), the interaction effects detected indicated that classroom student adversity negatively impacted teachers' mental health symptoms and career optimism only when they reported average or high satisfaction with material resources. We have a few considerations to offer when interpreting these findings. First, it could be that when beginning teachers in the present study were faced with more challenging classrooms, they may have struggled to utilize the material resources available to them in a way that counteracts the negative effects of these challenges. Alternately, it could be that they did utilize the material resources available to them but, since these resources are intended to benefit students, their utilization did not translate to improved teacher outcomes.

These findings are contrasted with past work that has observed positive teacher outcomes when higher-quality material resources are available (Gritz and Theobald 1996; Roberts et al., 2019); however, none of these studies exactly capture the same set of material resources. As such, it is likely that some resources are more effective than others in bolstering teacher (and perhaps student) outcomes, and future work would benefit from a closer look at which specific resources lead to the most optimal teacher outcomes.

Another consideration we offer is how the match or mismatch between one's expectations of a situation and the reality they experience might influence their outcomes. It could be that those teachers who expected that they would be receiving high levels of support through material resources (a factor they likely would be able to glean during the job interview process or from more general knowledge of the district and school they were placed in), but who later experienced highly adverse classrooms, had the most negative outcomes as a result of a mismatch in expectations vs. reality regarding how they would experience their first year of teaching. Alternately, teachers who entered expecting that they would not be well supported may have been better able to form realistic expectations for their first teaching year, and this may have protected them against more negative outcomes. This type of relation is consistent with the Stress-Inoculation Model (Boyce & Ellis, 2005; Meichenbaum, 2017) in which earlier adverse experiences actually buffer the effects of more recent stressors. This model posits that more exposure to stressors (or, in the case of the present study, knowledge or expectation of future stressors) may exert a desensitizing effect on an individual (Chorpita & Barlow, 1998; Garmezy, 1986), and/or might give that individual an opportunity to develop adaptive coping skills that they might use to deal with a later stress more effectively.



The interaction effect detected for school climate was more in line with our hypotheses: positive relations between classroom stress and participants' anxious symptoms only existed when participants reported poor or average school climate. The fact that this relation did not exist in cases of positive school climate illustrates the protective effect that positive school climate might have on teachers' mental health outcomes, and this is consistent with recent work among early-career teachers (Authors, 2017b). This finding further underscores the importance of positive school climate in supporting not only students but teachers as well. We also note that a marginally significant interaction effect echoing the protective nature of school climate was detected for teachers' career optimism, but again due to the limitations of this study we are hesitant to formally interpret this finding here. This relation should be probed further in future research.

More generally, while classroom student adversity was only found to directly predict one of the three outcomes (depressive symptoms), it appeared to be the primary driver of teacher outcomes when examining interactive effects among variables. These patterns support our conceptualization of classroom student adversity as a job demand with an immediate influence on teacher outcomes. It was also notable that perceived social support, a study covariate, was observed to have consistent associations with teachers' outcomes across all models. While the role of external (non-teaching related) factors was not of primary interest in this study, these patterns do point to the importance of further exploring the role of teachers' social support networks in contributing to their mental health and career outcomes. Indeed, social support has been identified as a buffer of negative psychological outcomes in multiple studies among the general population (Lin & Woelfel, 1985; Koeske & Koeske, 1990). We note this as an important direction for future research, and also note that the inclusion of this consistently

significant variable as a covariate serves to strengthen our ability to draw conclusions regarding our primary predictors of interest.

## **Limitations**

Aspects of this study warrant consideration as they limit the generalizability of findings. First, our sample consisted of a relatively small number of teachers from a single university teacher training program, and as such the study suffered from low power. This low power increases the chance of undetected or under-detected effects, so it is encouraging that significant results emerged; however, future studies should attempt to replicate these results among a larger sample size. All results detected here should be considered exploratory and interpreted conservatively. Second, the participants in our sample were not particularly diverse in regard to race/ethnicity and gender, and so we also caution that the results may not generalize as directly to male teachers and/or teachers of racial/ethnic groups not well represented in this study. Third, the timing of data collection was not uniform in that classroom student adversity and school resources were reported at T2, whereas school climate was reported at T3. This was done to provide teachers with enough time to form accurate impressions of their school's climate; however, there is a lack of temporal precedence for associations between school climate and study outcomes. Fourth, the Classroom Environment Student Difficulties Scale used in the present study to capture levels classroom student adversity is an investigator-developed measure used here for the first time. While this measure showed high internal consistency and predictive validity, its convergent and discriminant validity remain to be tested. Future studies should relate scores on this measure to other, well-established measures of classroom climate/stress to confirm its overall validity, and results here should again be considered exploratory. Last, all data utilized in this study were self-report and so the relations detected here do not support causal inference;

however, we did account for the T1 measures of each outcome in addition to other covariates as a best effort to parse out the variance in outcomes attributable to our predictors. Future work should attempt to replicate and expand on these results among larger, more diverse teacher samples, different analytic approaches (for example a latent variable approach), and using data gathering methods other than self-reports.

## **Implications**

The patterns revealed here speak to the importance of carefully considering how best to support teachers in their first years. Consistent with the Job Demands-Resources model, the job demand investigated (classroom student adversity) did emerge as a strong and significant predictor of teacher outcomes, and one of the resources (school climate) did show some potential as a protective factor; however, material resources, a resource investigated as another potential buffer of the negative effects of job demands did not appear to provide these benefits. These findings illustrate broadly that factors typically experienced by all beginning teachers likely vary in their impact on teacher outcomes (Eccles & Roeser, 2010), with some challenges being experienced more immediately than others. This echoes assertions in the field that the topics of teacher attrition and its early indicators are complex issues that warrant nuanced approaches (Buchanan, Prescott, Schuck, Aubusson & Burke, 2013; Lindqvist, Nordänger, & Carlsson, 2014; Weldon, 2018). Following we offer some final considerations of how our findings might be applied to educational research and practice.

Results regarding the negative influences of classroom student adversity could be used by schools and administrators when making decisions about the assignment of students to teachers. As stated in the Introduction, beginning teachers are typically assigned classrooms with higher proportions of more challenging students compared to veteran teachers (Gordon & Maxey, 2000;

Kalogrides & Loeb, 2013; Kalogrides, Loeb, & Beteille, 2013), suggesting a mismatch between what is optimal for new teachers and what they tend to experience. To remedy this, schools could attempt to ensure that new teachers are not placed in classrooms with higher levels of student-related adversity compared to their more senior colleagues. We recognize that this would no doubt present a logistical challenge for many schools, for example, rural schools with one class per grade, and those in which the proportion of more challenging students is a school or district-level feature rather than a classroom-level feature. As such, in the case that first/early career teachers are unavoidably matched with higher-adversity student compositions, our findings regarding school climate may inform supplemental approaches to helping new teachers adjust to their new roles successfully.

The direct and interactive effects of school climate bring to light the broad importance of this school-level feature in contributing to early-career teachers' mental health (and potentially career-related) outcomes. Importantly, our measurement of school climate primarily captured the nature of relationships among school colleagues and the prioritization of collaboration and innovation within a school, highlighting these as specific areas schools can target in their attempts to create positive climates. Schools could bring colleagues together and provide them with opportunities to build professional relationships, share ideas, and come up with innovative approaches to career-related challenges. Results of the present study suggest that such an approach may help to alleviate some of the negative outcomes experienced by beginning teachers, and may even contribute to more positive career outcomes.

### **Broader Considerations**

Contrasted with the organized induction of professionals into most white-collar occupations (Lortie, 1975; Tyack, 1974), U.S. teachers do not typically experience structured

support upon entry into the profession. Rather, new entrants are left to “sink or swim” in the isolation of their classrooms without the guidance of more experienced colleagues (Ingersoll, 2003; Johnson & Birkeland, 2003). One report states, “Although elementary and secondary teaching involves intensive interaction with youngsters, the work of teachers is largely done in isolation from colleagues” (Ingersoll & Kralik, 2004, p. 3). As such, the protective effects of school climate against adverse classrooms observed here serve to suggest that positive relationships and collaborations among colleagues should be made a more central feature in teachers’ daily classroom experiences, rather than primarily existing outside of the classroom setting. Indeed, given our findings that social support outside of the workplace was found to be such a consistent positive influence on participants’ outcomes, it stands to reason that intentional efforts of a school to bolster the relationships among faculty should result in similar positive effects. As such, programs that promote teacher-teacher interaction including high-quality mentored teaching, co-teaching models or simply providing teachers with frequent opportunities to observe and discuss their colleague’s teaching practices may see positive returns in terms of teachers’ well-being and career optimism.

In addition, we argue that the results of this study indicate that teachers would likely benefit from stronger foci in teacher training on topics such as emotion regulation, fostering positive professional relationships, and supporting challenging students. Most models of teacher training implemented in the U.S. today do not include targeted training in areas related to mental health, even despite evidence that skills such as emotion regulation are important for teachers’ success (Day, 2008; Newberry, Gallant & Riley, 2013). In addition, little time in training is devoted to topics such as behavior management, and to our knowledge no U.S. programs currently provide training on how to foster relationships with colleagues in the interest of

contributing to positive school climate. Promisingly, though, we identified one school-level professional development program that does focus on these topics which could easily be adapted for use in teacher training: The Leading Together program seeks to promote trust among school colleagues through training on topics including communication, fostering collaboration, conflict resolution, and building community among teachers (Rimm-Kaufman, Leis & Paxton, 2014). While such a program would likely be successful in helping practicing teachers improve their school's climate, it may also be successful in better preparing new teachers to contribute to a positive school climate upon entering the profession. Lastly, as mentioned previously, attrition among U.S. teachers has been characterized as more severe than in other countries (Cooper & Alvarado, 2006; Ingersoll, 2003; Karsenti & Collin, 2013; McKenzie et al., 2005). Our results point to some of the common experiences of U.S. early-career teachers that likely have implications for their career success and longevity. A clear next step is to compare these, and other, teacher experiences across countries in order to draw more definitive conclusions about how teachers across the globe navigate this important career transition.

In conclusion, all new teachers experience job demands upon entering the profession (Veenman, 1984), and these demands no doubt have steep implications for their career success and longevity. Findings of the present study provide the field with a clearer, more detailed picture of what teachers experience upon career entry and how these experiences might influence their continued progression through the early-career stage. By utilizing this and related information, educational leaders, policymakers, and pre-service teacher training programs can make more informed decisions about the types of supports that novice teachers might need to thrive in the profession. Movement in this direction would represent significant progress towards improving the lives and outcomes of both teachers and their students.

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Table 1

*Descriptive Statistics*

	<i>N</i>	Mean	SD	Min	Max	Skewness	Kurtosis
Classroom student adversity	92	1.53	.58	1	3.64	1.48	1.89
School climate	81	2.07	.62	1	3.83	.68	.56
Resources	92	2.55	.78	1	4.14	-.03	-.04
Social support	81	5.44	1.10	2	7	-.69	.28
T1 depression	114	1.74	.56	1	3.5	1.08	.86
T3 depression	87	2.04	.60	1	3.5	.35	-.36
T1 anxiety	108	1.95	.85	1	4	1.04	.27
T3 anxiety	90	2.21	.84	1	4	.45	-.75
T1 career optimism	107	4.13	.71	1.89	5	-.43	-.45
T3 career optimism	82	3.53	.76	1	5	-.22	.93

*Note:* T1 = Time 1, T2 = Time 2, T3 = Time 3.

Table 2

*Bivariate Correlations*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. T2 Class adversity	1													
2. T3 School climate	.12	1												
3. T2 Resources	.15	.28*	1											
4. Cohort	-.04	.12	-.09	1										
5. Early grades	.06	-.11	-.18	-.05	1									
6. Middle grades	-.01	.27*	.23*	.02	-.56**	1								
7. Later grades	-.07	-.13	-.03	.04	-.58**	.36**	1							
8. Social support	-.22	-.31**	.03	-.11	-.05	.21	-.15	1						
9. T1 Dep. symptoms	.20	.15	.18	.08	-.06	.13	-.07	-.06	1					
10. T3 Dep. symptoms	.44**	.43**	.25	.44**	.02	.05	-.07	-.39**	.36**	1				
11. T1 Anx. symptoms	.14	.11	.16	-.08	.02	.03	-.05	-.04	.66**	.34**	1			
12. T3 Anx. symptoms	.31*	.44**	.26	.29**	.01	.06	-.07	.37**	.35**	.80**	.47**	1		
13. T1 Career optimism	-.21	-.22	-.19	.23*	.12	-.18	.05	.025	-.27**	-.19	-.27**	-.18	1	
14. T3 Career optimism	-.38**	-.53**	-.36*	.07	.07	-.19	.10	.36**	-.32**	-.48**	-.29**	-.48**	.43**	1

Note: T1 = Time 1, T2 = Time 2, T3 = Time 3.

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

Table 3  
Path Model Estimates.

	Covariates Model			Main Effects Model			Interactions Model		
	<i>B (SE)</i>	<i>p</i>	$\beta$	<i>B (SE)</i>	<i>p</i>	$\beta$	<i>B (SE)</i>	<i>p</i>	$\beta$
T3 depressive symptoms									
Cohort	.42 (.10)	<.01	.37	.46 (.09)	<.01	.40	.45 (.09)	<.01	.39
Early Ed	.12 (.15)	.45	.10	.06 (.13)	.66	.05	.08 (.13)	.54	.07
Middle Ed	.17 (.18)	.35	.13	.03 (.17)	.89	.02	.04 (.16)	.80	.03
T1 social support	-.20 (.05)	<.01	-.37	-.11 (.05)	.04	-.20	-.10 (.05)	.07	-.17
T1 depressive symptoms	.22 (.08)	<.01	.22	.18 (.07)	.02	.18	.20 (.08)	.01	.19
T2 classroom student adversity	-	-	-	.38 (.10)	<.01	.39	.38 (.09)	<.01	.40
T3 school climate	-	-	-	.21 (.10)	.04	.22	.27 (.10)	<.01	.29
T2 school resources	-	-	-	.07 (.08)	.40	.09	.03 (.08)	.67	.04
CSA x RES	-	-	-	-	-	-	-.43 (.15)	<.01	-.29
CSA x SCL	-	-	-	-	-	-	.05 (.19)	.85	.03
T3 anxious symptoms									
Cohort	.43 (.10)	<.01	.27	.45 (.13)	<.01	.28	.39 (.13)	<.01	.24
Early Ed	.15 (.21)	.46	.10	.09 (.19)	.65	.05	.22 (.19)	.25	.14
Middle Ed	.29 (.24)	.24	.16	.04 (.25)	.88	.02	.21 (.24)	.40	.11
T1 social support	-.27 (.08)	<.01	-.36	-.16 (.08)	.04	-.21	-.17 (.08)	.03	-.22
T1 anxious symptoms	.31 (.07)	<.01	.33	.30 (.07)	<.01	.31	.25 (.08)	<.01	.26
T2 classroom student adversity	-	-	-	.31 (.17)	.08	.22	.36 (.15)	.02	.27
T3 school climate	-	-	-	.34 (.15)	.02	.26	.38 (.15)	.01	.29
T2 school resources	-	-	-	.08 (.13)	.52	.08	.01 (.13)	.93	.01
CSA x RES	-	-	-	-	-	-	-.53 (.24)	.03	-.25
CSA x SCL	-	-	-	-	-	-	.57 (.28)	.05	.23
T3 career optimism									
Cohort	.11 (.14)	.58	.07	.12 (.13)	.35	.08	.11 (.13)	.38	.07
Early Ed	-.17 (.19)	.49	-.11	-.14 (.17)	.43	-.09	-.05 (.16)	.75	-.03
Middle Ed	-.49 (.22)	.03	-.29	-.19 (.25)	.43	-.11	-.06 (.21)	.78	-.03
T1 social support	.29 (.07)	<.01	.41	.20 (.09)	.02	.28	.15 (.21)	.04	.20
T1 career optimism	.33 (.11)	<.01	.32	.30 (.13)	.02	.29	.26 (.11)	.02	.24
T2 classroom student adversity	-	-	-	-.07 (.47)	.88	-.06	-.28 (.11)	.13	-.22
T3 school climate	-	-	-	-.34 (.13)	.01	-.28	-.36 (.12)	<.01	-.29
T2 school resources	-	-	-	-.25 (.16)	.11	-.26	-.25 (.23)	.03	-.25
CSA x RES	-	-	-	-	-	-	-.45 (.23)	.06	-.23
CSA x SCL	-	-	-	-	-	-	.47 (.27)	.08	.20

Note. T1 = Time 1, T2 = Time 2, T3 = Time 3.

Note. CSA x RES = Classroom student adversity-by-resources interaction; CSA x SCL = Classroom Student adversity-by-school climate interaction.

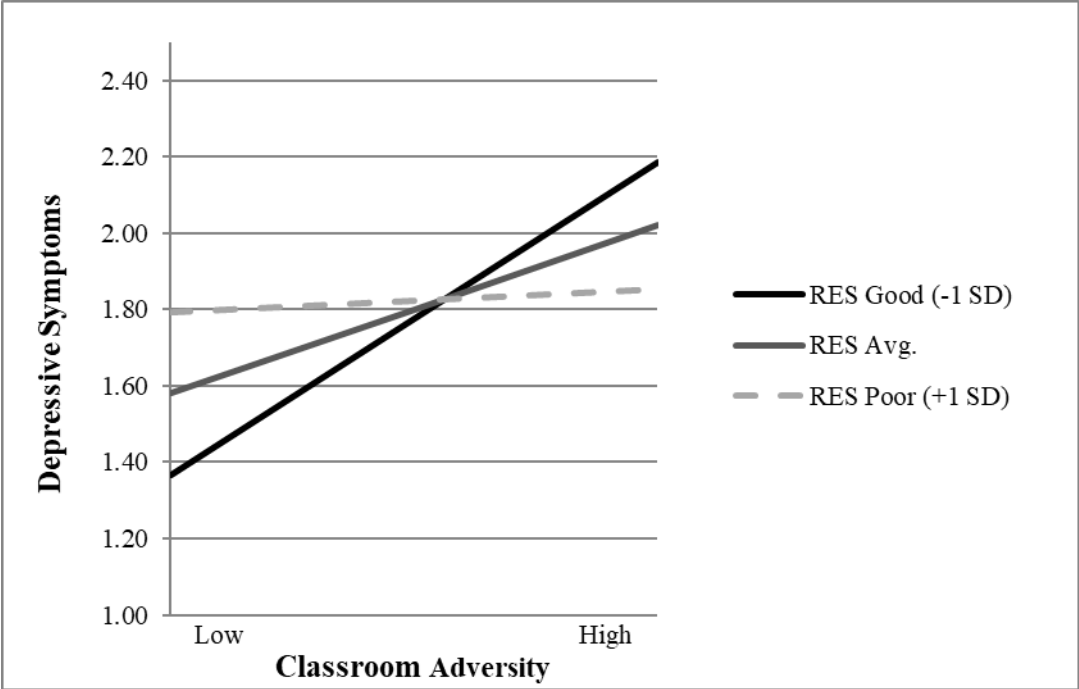


Figure 1. RES = resources, solid lines represent significant simple slopes. When teachers reported high and average satisfaction with resources, a positive association existed between classroom student adversity and depressive symptoms.

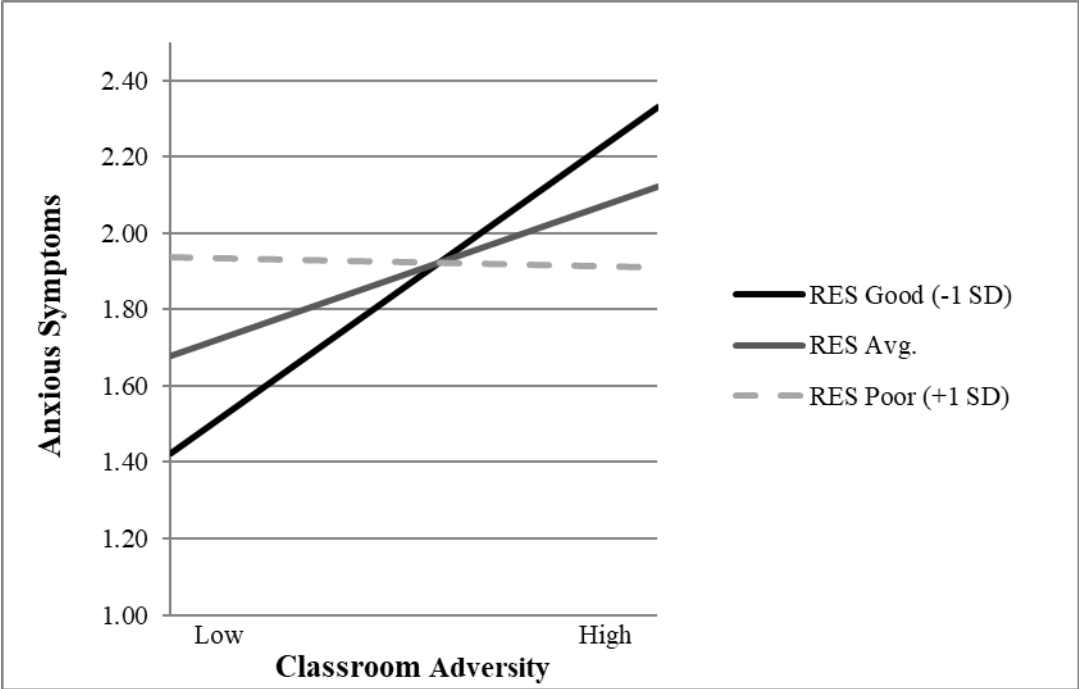


Figure 2. RES = resources, solid lines represent significant simple slopes. When teachers reported high and average satisfaction with resources, a positive association existed between classroom student adversity and anxious symptoms.



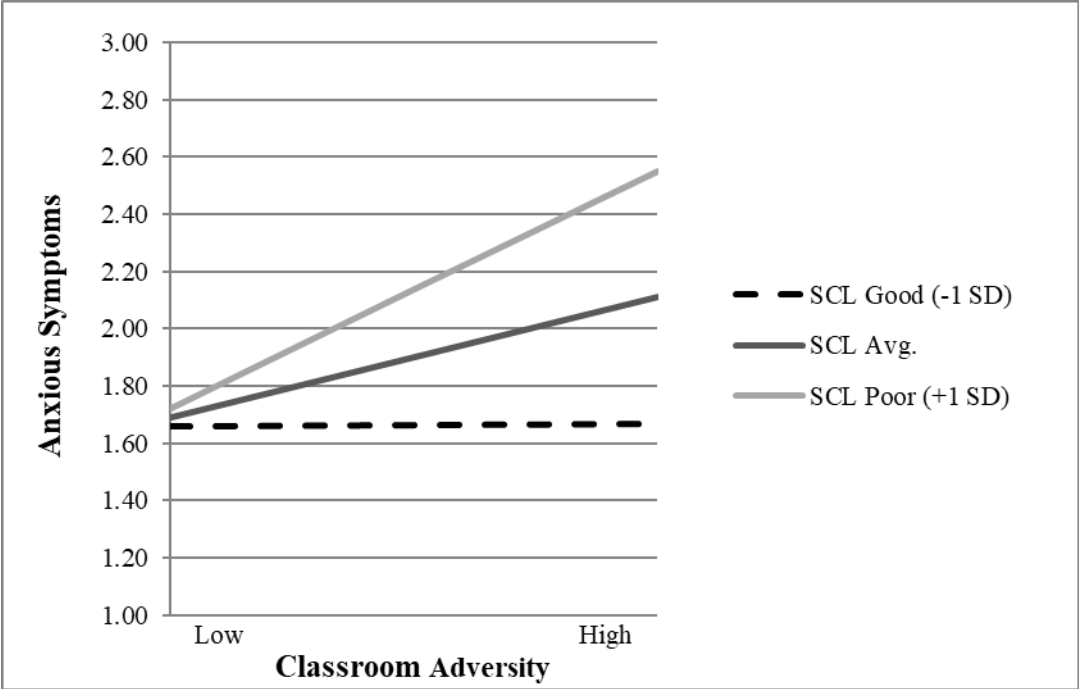


Figure 3. SCL = school climate, solid lines represent significant simple slopes. When teachers reported average and poor satisfaction with school climate, a positive association existed between classroom student adversity and anxious symptoms.