ABSTRACT

Title of Thesis:	WORRY INTENSITY ABOUT SIUTATIONS EXPERIENCED BY STUDENT TEACHERS
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Student teachers are often overlooked in discussions about teacher burnout, attrition, and turnover despite evidence that burnout may begin to develop during student teaching (Horgan, Howard, & Gardiner-Hyland, 2018). High rates of teacher turnover and attrition are costly and detract from the quality of education (Alliance, 2014). This study examines four questions related to student teachers' experience with worry and stress: how much do student teachers worry about common teaching situations, to what extent is worry intensity situational, how do student teachers describe their experiences with worry, and is worry intensity related to perceived stress reactivity? Results demonstrated that person differences accounted for relatively more variation in worry intensity than did situations. Further, results demonstrated that worry intensity was significantly related to perceived stress reactivity to social evaluation. Implications for understanding how individuals reason about worry intensity and implications for teacher preparation programs are discussed.

WORRY INTENSITY ABOUT SITUATIONS EXPERIENCED BY STUDENT TEACHERS

by

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Chapter 1: Introduction

Two important topics, worry and student teachers, are reviewed and studied in this paper within the context of stress. Worry is often conceptualized within the context of anxiety as excessive worry represents the cognitive dysregulation component of anxiety (Nitchske et al., 2001). Student teachers report high levels of worry and stress (Herman, Hickmon-Rosa, & Reinke, 2018; Kyriacou & Stephens, 1999). Despite high levels of worry and stress, student teachers as a whole do not represent a clinically anxious population. Thus, this study seeks to contextualize student teachers' worry experiences through the stress framework. Worry and stress both occur because of person and environment interactions when an individual perceives a threat or stressor. Both also exist on a continuum and can help the individual respond to the environmental stressor when the intensity is commensurate or can inhibit response if the response is excessive (Gassull et al., 2010; Gladstone, Parker, Mitchell, Malhi, Wilhelm, & Austin, 2005).

Despite student teachers' high reports of stress and worry as well as evidence suggesting that burnout (i.e., a state of exhaustion due to work) can begin to develop during student teaching, little research has examined student teachers specifically (Gives, Hamman, & Olivarez, 2007; Horgan, Howard, & Gardiner-Hyland, 2018). It is important to understand student teachers' experiences with worry and stress so that early interventions can be developed to help prevent burnout, turnover, and attrition later in their careers. Turnover and attrition rates are high with estimates suggesting that ten percent of teachers move to different districts by year five of teaching (turnover) and between seventeen and forty-four percent leave teaching altogether

(attrition) by year 5 of teaching (Gray & Taie, 2015; Ingersoll, Merrill, Stuckey, & Collins, 2018). Unsurprisingly, attrition and turnover are costly to school systems (Alliance, 2014). It is essential to dedicate research towards understanding the intricate relationships between worry, stress, and student teachers so that teachers are better prepared when entering the classroom.

Worry

Worry refers to the negative emotional experience that results from repetitive unpleasant thoughts about future events (Sweeny & Dooley, 2017). Although people typically associate worry with negativity and times of distress, worry can be adaptive. Worry can help initiate the problem solving process and can cue an individual to direct attention toward the stressor in order to motivate action (McCaul & Mullens, 2003). Worry intensity as well controllability of worry thoughts seem to be the important dividers between adaptive and motivational worry versus catastrophic, negative, and maladaptive worry. Thus, some have proposed that worry should be conceptualized as a continuum of intensity that encompasses both motivational worry and catastrophic worry (Gladstone et al., 2005).

Worry at an intensity that sparks motivation has been found to be related to increased engagement in healthy behaviors like using sunscreen or getting breast cancer screenings because of worry episodes about skin cancer and breast cancer, respectively (Kiviniemi & Ellis, 2014; Zhang, Chiraelli, Glendon, Mirea, Knight, Andrulis, & Ritvo, 2012). On the other hand excessive worry can sometimes lead to inaction regarding preventative health behaviors, like breast cancer screenings (Zhang et al., 2012). Additionally, disproportionate worry or excessive worry occurring in the

absence of a stressor has been associated with generalized anxiety disorder, social anxiety, increased perfectionism, and heightened vigilance to potential danger/uncertainty (Freeston, Dugas, & Ladouceur, 1996; Gladstone et al., 2005; Grupe & Nitschke, 2014).

Worry intensity has sometimes been measured by using frequency measures of worry and then drawing intensity interpretations from that data (Donovan et al., 2017; Pretorius et al., 2015). Others have taken a different approach and have had individuals rate their general worry intensity within a specific timeframe by asking, for example, how much an individual worried within past hour on five point Likert scale ranging from "not at all" to "very" (Thielsch, Andor, & Ehring, 2015). Still other researchers have investigated worry intensity by asking individuals to rate their worry intensity in response to specific content. Some examples of this type of measurement include asking individuals to rate their worry intensity at certain time points along a 0—10 point continuum or to rate on a 5-point scale how intensely the individual worries about a specific situation (Silverman, La Greca, & Wasserstein, 1995; Verkuil, Brosschot, Meerman, & Thayer, 2012). These focused measures can be more useful measures of worry intensity because they more fully examine the extent of the intensity rather than just the frequency. The measure of worry intensity used in this study is a focused measure that asks individuals to rank their worry intensity about specific situations along an 8-point scale, 0 (not at all worrisome) —7 (very worrisome). This approach is similar to Silverman and colleagues' (1995) approach where they asked children if they were worried about a variety of situations and if the children indicated that they were worried, then they were asked to rate their

worry intensity on a 5-point scale. The current approach uses a similar method, but includes an extended numerical span for response.

Worry intensity and situational worry. Though worry seems to exist on a continuum of intensity, little research has examined worry intensity specifically or how different situations can impact the experience of worry. More research has examined anxiety in different situations and because worry is sometimes considered the cognitive component of anxiety, this line of research can be helpful in understanding situational worry. Research into situational anxiety has revealed that certain individual differences (i.e., having a toothache, uncertainty in a medical appointment) can increase the amount of anxiety experienced during a medical procedure (Ramos et al., 2013; Rosen & Knäuper, 2009). Anxiety intensity has also been studied in the context of competition. One study found that situational factors such as the amount of time left before the competition impacted the intensity of anxiety that was experienced, with anxiety increasing as the competition drew closer (Swain & Jones, 1993).

Some research that has focused specifically on worry and situational context has examined evaluative testing situations. Results demonstrate that when the testing situation has serious and individualized consequences or when test takers have done poorly on similar tests in the past, worry intensity increases and higher levels of worry negatively impact testing performance (Mulkey & O'Neil, 1999; O'Neil & Abedi, 1992; Ramirez & Bellock, 2011). Apart from testing situations, situational worry intensity has been studied in terms of developmental progression. As children develop and face different situations, they experience intense worry differently. For

example, young children tend to worry intensely about being scolded and about harm to loved ones, but as peers become increasingly important when children transition into adolescence, intense worry about being bullied and evaluated socially increases (Laing et al., 2009). Thus, worry intensity is impacted by situational factors that become more salient with development. Overall, literature on worry and anxiety suggest that worry is likely experienced on a continuum of intensity and that different situations can impact the experience. Further research is needed to better understand worry intensity and situational worry. The current study aims to examine worry in a unique way by focusing on the potential impact that situational context relevant to teaching has on the intensity of worries that are experienced by student teachers. This population is especially favorable for studying worry intensity because student teachers not only face the same stressors as professional teachers, but they face additional unique stressors related to the student part of their role, such as having their own classes and being evaluated by supervisors and mentor teachers (Chaplain, 2008; Horgan et al., 2018).

Stress Reactivity

While worry is a typical response to environmental stressors, other physiological systems, like the stress response system, are activated by environmental stressors and demands. Stress encompasses the emotional and physiological reactions that occur because of an interaction between an individual and the environment when the individual perceives a stressor to be harmful or unmanageable (Lloyd, King, & Chenoweth, 2002; Schlotz et al., 2011). Though stress, like worry, is often considered to be negative because of the perceived aversive experience of stress, it can be

adaptive and helpful as long as the level of stress is commensurate to the stressor and the stress does not inhibit other response functions (Gassull et al., 2010). Individuals experience stress in different ways, as different people perceive stressors based on their own past experiences and expectations; these individual differences refer to stress reactivity (Schlotz et al., 2011). Those who are high in stress reactivity tend to have a low threshold for stress and have highly reactive stress response systems, while those who are low in stress reactivity demonstrate less reactive stress responses (Levens, Elrhal, & Sagui, 2016). Stress reactivity has been positively related to many other constructs such as depression, anxiety, negative affect, and psychosomatic symptoms (Jackowska, Fuchs, & Klaperski, 2018; Schlotz et al., 2001; van Eck, Berhof, Nicolson, & Sulon, 1996; Levens et al., 2016). Stress reactivity may also be impacted by situational factors, similar to worry. One study found that teachers with voice problems compared to those without voice problems had significantly higher stress reactivity (Gassull et al., 2010). Although, in this particular example, it is possible that an individual characteristic (the voice problem) may be interacting with the situation (teaching), it still highlights the important role that situational context plays in stress and worry.

Stress reactivity can be measured in different ways. Often researchers use changes in physiological markers of stress, such as cortisol, to measure stress reactivity (Esposito & Bianchi, 2012; Schlotz, Hellhammer, Schulz, & Stone, 2004). There are some benefits to this approach such as the approach being objective and physiologically linked. However, in addition to financial limitations, this approach is more invasive than other measures (Britton et al., 2017). Other options for measuring

stress reactivity include self-report measures, such as the Perceived Stress Reactivity Scale (PSRS), which can be used to measure an individual's typical stress response to a variety of different situations (Britton et al., 2017). The PSRS is also a helpful measure because it provides the opportunity to better understand the impact of situational factors (Schlotz et al., 2011). Overall, stress reactivity, like worry, is impacted by intensity of the response and situational context. Both stress reactivity and worry are also linked because of a similar pattern of physiological activation and both are linked because they function to respond to stressors. Thus, it is important to examine how these two constructs may be related. This study addresses this area of research by examining how perceived stress reactivity reported by student teachers relates to their experiences of worry intensity during their student teaching practicum.

The link between worry intensity and stress reactivity has not been studied extensively in the literature. Some research investigating the link between more general worry and stress has demonstrated that worrying about a stressful event can prolong the stress response in terms of physiological functioning (Verkuil et al., 2012). Additionally, the link has been studied within specific populations that often face stress. One such population is those in the teaching profession because of its high stress nature and the high level of burnout amongst teachers (Gray & Taie, 2015; Herman, Hickmon-Rosa, & Reinke, 2018). Within this line of research, results tend to demonstrate that teachers report that similar conditions and situations (i.e., disruptive student behavior, the correct and effective teaching of material to students, and how others perceive and evaluate them) elicit both worry and stress (Faulk, Gloria, & Steinhardt, 2013; Kyriacou & Stephens, 1999; Skaalvik & Skaalvik, 2015). Since

these conditions and situations are encountered daily, they can lead to high levels of stress and worry. This can be particularly difficult for individuals that have a tendency toward high stress reactivity because these individuals are likely to be more reactive and are likely to interpret more situations as stressful.

Another study also examined the link between worry and stress reactivity by examining teacher's daily worry episodes and daily somatic health complaints (i.e., physiological responses related to the stress response system). The results demonstrated that worry frequency and intensity predicted the number of somatic health complaints (Verkuil et al., 2012). In this study, worry intensity was measured by having teachers rank their worry intensity at certain time points throughout the day along a 0 (slightly intense) to 10 (very intense)-point scale. Additionally, the researchers found that worry intensity was significantly related to the number of stressful events that the teachers encountered. Overall, this area of research suggests a connection between worry and stress, though more research is needed to understand how worry intensity and stress reactivity may be related. Additionally, more research with those in the teaching profession is important because this population faces worrying and stressful events daily, which likely contributes to the high rate of attrition in this field (Gray & Taie, 2015). The cost of attrition is high with researchers estimating that the cumulative costs of attrition and turnover cost states across the United States to spend between $1 billion and $2.2 billion per year in separation costs, recruitment and hiring costs, and training costs (Alliance, 2014). Better understanding the experiences of those in the teaching profession is essential for creating effective policy changes to reduce burnout and attrition/turnover.

The Current Study

The target group: Pre-service student teachers.

The experiences of stress and worry in teachers have received much attention in research in order to better understand teacher burnout and teacher attrition. However, despite this focus, little research has examined the experiences of student teachers. This area may be lacking because often in training programs stress and worry are considered part of the norm (Chaplain, 2008). Although this population has largely been overlooked, some research does indicate that student teachers experience similar stressors to professional teachers as well as experiencing additional stressors unique to their role as a student and a teacher (Chaplain, 2008). Due to the additional sources of stress, as well as the typical teacher stressors, some have proposed that teacher burnout may begin to develop during the student-teaching experience (Horgan, Howard, & Gardiner-Hyland, 2018). Thus, the target group for this study is student teachers because they are understudied, but also are a population that faces stressful and worrisome situations consistently. Additionally, targeting efforts to better support teachers early on during their training may be an effective way to produce teachers who are prepared for coping with difficulties in the profession. The most recent study that examined what student teachers are worried about is from 1999 and much has changed in terms of educational demands and teacher training programs (Kyriacou & Stephens, 1999).

Research questions.

This study explored four questions regarding worry intensity and perceived stress reactivity in student teachers. The first question asked how much do student

teachers worry about common teaching situations? The second question asked to what extent is worry intensity a function of the situation or individual characteristics of the person? As the review of literature has demonstrated, research into worry intensity is sparse; especially research examining how different situations may impact worries. Although past research implies that situational context is important to worry, this has not been specifically demonstrated. The third question addressed how student teachers describe their experiences with worries. This question was answered by identifying the themes underlying the reasons the student teachers provide for their worry intensity ratings. Reasoning behind worries is not often studied. By focusing on the reasoning about worry intensity, the current study contributes more information about student teachers' experiences with worry to the research base. Improving the understanding of student and beginning teachers' experiences with worry, stress, and burnout has implications for future interventions to target prevention of burnout and, in turn, teacher turnover and attrition.

Finally, this study answers the question of whether worry intensity is related to stress reactivity. Again, this connection seems to make sense given research linking worry to anxiety (a component of anxiety) and other lines of research linking anxiety to the stress response system. However, this more specific and direct link between worry and stress reactivity has largely been overlooked. This question is important because worry can be measured in many different ways (i.e., pathological worry, worry frequency, worry intensity, content, trait worry) and therefore how worry is measured and how it is defined plays an important role in understanding this phenomenon. Overall, the literature provides support that worry intensity may relate

to stress reactivity because of shared ties to the stress response system, but this specific relation still needs to be researched. Though a positive relationship is expected, it is important to note that because the population in the current study is not clinical and a certain degree of stress reactivity and worry intensity is adaptive, actual results may vary and are difficult to accurately predict.

Chapter 2: Overview of the Literature

Worry is a term frequently used to describe the aversive emotional experience that occurs because of perseverating on unpleasant thoughts about future events (Sweeny & Dooley, 2017). The perseverative thoughts associated with worry can make concentration more difficult and can also decrease positive affect (Sweeny & Dooley, 2017). Due to these negative associations, worry tends to carry a bad reputation. Despite the negative aspects of worrying, it can also be beneficial as worry can act as a motivator that kick-starts the problem solving process (McCaul & Mullens, 2003). Some have proposed that worry acts as a motivator because it serves as a cue to the individual that a situation may be threat-relevant and require action. Additionally, worrying about a stressor ensures that attention is being given to the stressor and provides continuous cues that may motivate toward action. Finally worry, because it is unpleasant, may motivate an individual toward action in an effort to reduce the worry (McCaul & Mullens, 2003).

Interestingly, the distinction between worry being adaptive and motivational versus worry impairing concentration and decreasing positive affect seems to come down to intensity. Some argue that worry should be conceptualized as a spectrum with one end encompassing typical worry that has motivational qualities and the other end encompassing problematic worry with repetitive, often catastrophic, thoughts about the future (Gladstone, Parker, Mitchell, Malhi, Wilhelm, & Austin, 2005). The adaptive levels of worry that motivate toward action have been associated with recovering from trauma and depression and executing successful problem solving (Watkins, 2008). Additionally other studies have demonstrated that motivational

levels of worry have been associated with engaging in healthy behaviors. For example, worry episodes about skin cancer were predictive of sunscreen use even after controlling for perceptions of risk (Kiviniemi & Ellis, 2014). Another study found similar results in worries about breast cancer, with adaptive levels of worry being related to breast cancer screenings while excessive worry was sometimes paralyzing and resulted in inaction (Zhang et al., 2012). Thus, when people worry about possible future outcomes that can be mitigated by certain actions, worry can motivate people to engage in those actions.

On the other hand, the more extreme levels of worry have been associated with depressed mood and poor physical health (Sweeny & Dooley, 2017). This extreme worry, on the higher end of the spectrum, is characterized by worrying despite the absence of a stressor or worrying in a way that is disproportionate to the stressor (Freeston et al., 1996). Additionally excessive levels of worry have been associated with mental health disorders such as anxiety disorders. Specifically, excessive worry about minor issues and distress over the perceived uncontrollable nature of worrying are associated with generalized anxiety disorder (Gladstone et al., 2005). Excessive worry has also been related to social anxiety, increased perfectionism, the tendency to feel time-pressures, and heightened concern about potential danger and safety threats (Gladstone et al., 2005).

Theoretical Models Supporting Worry Intensity as a Spectrum

Some theoretical models also support the idea that worry is experienced on a spectrum of intensity. Unfortunately, there are few models in the literature that examine worry specifically, as most models that do involve worry conceptualize it

through its relation to anxiety. For example, high levels of worry are related to anxiety disorders and many view worry as the cognitive component of anxiety with some theorizing that anxiety includes two dimensions: anxious apprehensions and anxious arousal. Anxious arousal refers to physiological symptoms including hypersarousal and somatic tension while anxious apprehensions refer to worry (Nitschke, Heller, Imig, McDonald, & Miller, 2001). Despite these similarities, anxiety represents a more general vague feeling of fear, dread, or danger in response to a stressor or threat while worry is specifically focused on the unpleasant experience that arises from perseverating on potential future events (Gana, Martin, & Canouet, 2001; Sweeny & Dooley, 2017). Additionally, many studies have distinguished worry and anxiety psychometrically and through differences in associations with related constructs (Davey, Hampton, Farrell, & Davidson, 1992; Zebb & Beck, 1998; Heller & Nitschke, 1998). Overall, although worry is distinct from anxiety, models of anxiety that relate to worry can still be very helpful in better understanding worry and worry intensity (See Appendix B for a diagram of distinct, but overlapping constructs theoretically related to worry).

One particularly helpful model proposes four cognitive components of generalized anxiety disorder (Dugas et al., 1998). The first component, intolerance of uncertainty, is a dispositional characteristic that impacts how an individual perceives and responds to uncertain or ambiguous events (Donovan, Holmes, Farrell, & Hearn, 2017; Dugas et al., 1998). The second component is beliefs about worry, which can be positive or negative, with positive beliefs demonstrating an adaptive coping strategy and negative beliefs demonstrating uncontrollable and harmful worry

(Donovan et al., 2017). It is possible for individuals to hold both types of beliefs, however those who hold more of any type of belief overall are more likely to worry (Donovan et al., 2017; Dugas et al., 1998). The 'beliefs about worry' component lends support to the idea that worry exists on a spectrum encompassing adaptive and motivating worry as well as harmful and uncontrollable worry. The third feature in this model is poor problem orientation, which includes the process of understanding problems such as problem perception, attribution, appraisal, personal control beliefs, and emotional responses (Dugas et al., 1998). The last feature of the model is cognitive avoidance, which refers to strategies that an individual uses in order to avoid worrying thoughts that are distressing (Donovan et al., 2017). This model emphasizes two important aspects of worry—the impact of uncertainty and the different manifestations of worry intensity. When future situations are especially uncertain, there is little prior experience that would bolster confidence, and if individuals are intolerant of uncertainty then worry is more likely. Additionally, this model emphasizes that worry and anxiety can manifest differently (i.e., adaptively or maladaptively) based on perceptions of worry.

Another helpful model stems from the evolutionary perspective, which asserts that anxiety, at moderate levels, is adaptive and increases chances of survival because it helps individuals respond quickly and appropriately to threats (Marks & Nesse, 1994). However too much anxiety can inhibit an individual's ability to respond while too little anxiety can cause an individual to face a threat unprepared (Marks & Nesse, 1994). Anxiety provides an individual with protection from threats because it evokes escape (i.e., removing an individual from the threat), aggressive defense (i.e., anger or

physical defense which harms the source of threat), freezing (i.e., helps to assess danger and stay concealed), or submission (Marks & Nesse, 1994). Thus, this view supports understanding worry and anxiety as falling along a spectrum of intensity that encompasses both adaptive and impairing levels. Further models of anxiety that contain worry as a component fit in nicely with the evolutionary perspective because too little anxiety may not provoke enough worry to be motivational and too much may lead to avoidance, which would also not provoke worry.

Additionally, from an evolutionary perspective of anxiety, it has been proposed that anxiety disorders may be elicited by different situational needs. For example, general anxiety is thought to have evolved in order for individuals to respond to vague threats whereas subtypes of anxiety evolved in order for individuals to have an advantage when responding to a specific threat (Marks & Nesse, 1994). Additionally, general anxiety versus specific anxiety elicits different patterns of behavioral responses that are most adaptive for the situation. In general anxiety, threats tend elicit increased vigilance, physiological arousal, and planning behaviors for future defense whereas in specific anxiety disorders (i.e., social anxiety, separation anxiety, etc.) behaviors that tend to be elicited include freezing, submission, or flight (Marks & Nesse, 1994).

Two commonalities, related to worry, appear between these two proposed models of anxiety. The first commonality is that both models support and refer to a spectrum of intensity. In Dugas and colleagues' cognitive model of anxiety, one of the four main components is beliefs about worry (1998; Dugas, Marchand, & Ladouceur, 2005; Dugas et al., 2007). This component asserts that people can have

positive or negative beliefs about worry and that these beliefs inform whether worry is on the constructive side of the spectrum or the maladaptive side of the spectrum (Dugas et al., 2007). The evolutionary perspective also discusses a spectrum, asserting that anxiety at appropriate levels is adaptive and motivational, whereas too little anxiety can lead one to being unprepared and too much anxiety can inhibit proper response to the threat (Bateson, Brilot, & Nettle, 2011; Mark & Nesse, 1994). The second commonality between the two models is the situational nature of anxiety and worry. For example, in the cognitive model of anxiety, the first component is intolerance of uncertainty (Dugas et al., 2007). Thus, the model implies a connection between the degree of perceived uncertainty in specific situations and the level of subsequent anxiety. This means that when the outcome of a situation seems very uncertain and a person is intolerant of uncertainty, they will feel more anxiety. Similarly, the evolutionary perspective also acknowledges the importance of situational impact on anxiety by asserting that different types of anxiety evolved in order to respond to different situations in the most adaptive way possible. Thus, both of these models, which originate from different perspectives support that anxiety and worry exist on a continuum of intensity, depend on situational context, and the continuum of intensity is related curvilinearly to adaptive functioning.

Situational Worry Tied to Worry Intensity

Since some literature and proposed models suggest that worry exists on a spectrum of intensity and also that different situations impact worry differently, it is important to understand how situational worry and worry intensity are linked. As has been previously mentioned, little literature focuses exclusively on worry and much of

the literature tangentially references it as part of anxiety. Thus, some of the research that examines this link between intensity and situational impact references anxiety. In considering the literature, it is important to differentiate a situation identified as worrisome, aspects of the situation that elicit worry, and aspects of the worry. Worrisome situations are situations that are identified as worrisome by individuals and there are many common worrisome situations such as medical procedures, competitions, and testing. Aspects of a situation that elicits worry is different from the situation itself because it is based more on the perception of the individual and what becomes active for the individual when anticipating or experiencing the situation. For example, in a competition many aspects of the situation could be perceived as worrisome (i.e., the importance of a win vs. a loss, perceived skill of an opponent, or amount of time until competition). These different aspects are not necessarily what makes the situation worrisome for everyone, as different aspects may be active for some individuals and not others. Finally, aspects of the worry differ from the situation itself and aspects of the situation. Aspects of worry refer to the intensity of the worry, beliefs about the worry, and how adaptive the worry is.

One area of research has examined levels of anxiety experienced during different medical procedures and this train of research tends to support the importance of situational context. One study examined children undergoing dental procedures and found that children with toothaches experienced more anxiety related specifically to the procedure than those who did not have a toothache (Ramos et al., 2013). Additionally, results indicated that generally children experienced a decrease in anxiety over the course of five appointments (Ramos et al., 2013). These findings

suggest that situational factors, such as a toothache and increasing familiarity with the dentist impact the intensity of anxiety that the children experienced. Additionally, continued exposure to the dentist as well as the absence of negative experiences could also reduce anxiety about the situation. Other research involving medical situations found that individuals were most likely to seek more information from the doctor and experienced the most intense anxiety when the medical situation was highly uncertain (i.e., the situation was too unpredictable and vague to fit into a category of past experiences; Rosen & Knäuper, 2009). This again relates to the models of anxiety previously discussed, where the situational uncertainty is an important factor in the experience of anxiety.

Apart from medical situations, anxiety has also been examined in competitive situations. Similar to the distinction made by Nitschke and colleagues (2001) about anxious apprehensions and anxious arousal, others have made a distinction between cognitive anxiety (i.e., anxious apprehensions—worries or repetitive and uncontrollable thoughts about potential negative events) and somatic anxiety (i.e., anxious arousal—the physiological components of anxiety) (Swain & Jones, 1993, 1996). In one study, the relationship between cognitive anxiety intensity and performance in basketball was found to follow an inverted U-shaped function. This means that with an optimal amount of cognitive anxiety intensity, performance may be enhanced; however too much or too little cognitive anxiety may be detrimental to performance (Swain & Jones, 1996). These findings support the proposed model of anxiety from the evolutionary perspective that there is an appropriate amount of

anxiety along the spectrum that is optimal for survival or success (Bateson et al., 2011; Mark & Nesse, 1994).

Another study that examined cognitive anxiety and somatic anxiety within a competitive situation also took into account the impact of temporal context on anxiety levels. These researchers found that temporal factors, such as the time left before competition significantly impacted the levels of anxiety experienced (Swain & Jones, 1993). More specifically, they found that cognitive anxiety intensity was significantly greater right before a track and field competition than it was two days before and that somatic anxiety intensity increased progressively as the competition grew closer (Swain & Jones, 1993). These findings again support the importance of aspects of the situation like timing and how context significantly impacts the amount of anxiety that is experienced.

Some studies investigating anxiety in competitive situations have also examined the impact of beliefs about anxiety on performance. Studies have found that higher performance level and higher self-confidence was related to positive beliefs that worry intensity was facilitative of performance while low performance and low self-confidence was related to beliefs that worry was detrimental to performance (Hanton, Jones, & Mullen, 2000; Jones, Swain, & Hardy, 1993). These findings lend support to the beliefs about worry component of the cognitive model (Dugas et al., 2007). This may demonstrate an intricate relationship between a situation and worry intensity, with the situation and features of the situation informing how the individual perceives the situation, which impacts the intensity, but beliefs about the intensity impacting the response to the situation. These results highlight the importance of

understanding how individuals reason about their worry experiences because their beliefs about worry and their reasoning may impact whether the worry is facilitative or debilitative. The current study aims to build on this, by examining both the situations that are worried about and the features of the situations that are perceived by the individual to be worrisome by investigating how individuals explain their worry intensities.

While research that links anxiety intensity and situational context is helpful in better understanding the links between worry intensity and situational context, some research has focused separately on worry. One area of research has examined worry experienced during testing situations. Results have suggested that when the testing situation involves high-stakes testing (i.e. when testing has serious and individualized consequences) worry intensity and cognitive anxiety was greater than in situations involving low-stakes testing (O'Neil & Abedi, 1992; Segool, Carlson, Goforth, von der Embse, & Barterian, 2013). Additionally, the researchers found that performance on the test was related to the state of worry that the student was experiencing, with students experiencing high state worry performing more poorly than students experiencing low state worry (O'Neil & Abedi, 1992; Segool et al., 2013). Again, these results demonstrate how instrumental aspects of the situation are in the experience of worry and the impact of worry intensity on outcomes within a situation. Additionally, these results point to the perceived importance of the situation being related to the worry experience, with higher perceived importance being related to higher worry intensity.

Apart from testing and evaluative situations, other research has examined how specific situations related to professions and schooling can impact worry intensity. One study found that student teachers were most worried about taking over teaching duties because they were worried about not being seen as the real teacher, not being able to handle disruptive behavior, teaching incorrectly, and being evaluated by others (Kyriacou & Stephens, 1999). Clearly, these worries and the intensities of these worries stem from the situation of teaching and related aspects of that situation such as teaching competence and social evaluation from students and colleagues. Another study that investigated worry intensity in teachers, examined somatic health complaints (Verkuil et al., 2012). They chose to focus on this population because worry intensity is especially prevalent and powerful when individuals are in high stress jobs and are prone to worrying about work even when the workday is done. Individuals in these situations are also more likely to experience emotional and somatic symptoms (Verkuil et al., 2012). Results from this study demonstrated that worry intensity significantly predicted the number of reported somatic health complaints from teachers and that worry was highly related to the number of stressful events experienced (Verkuil et al., 2012). These results illustrate the importance of environmental characteristics and situational factors in evoking intense worry.

Research has also examined other high stress professional training programs like medical school. One cross-sectional study that looked at medical school students in their first year versus medical students in their last year found that the first year students reported higher levels of anxiety and more first-year students reported more intense anxiety than those in their last year (Bassols et al., 2014). Similar to the

studies investigating teachers, this study highlights the importance of situational context when researching worry as students within the same program experienced different intensities of worry across the years of enrollment because of different situations.

Measuring Worry Intensity

Since worry can be conceptualized as its own construct and often also conceptualized as a component of anxiety, there are multiple ways to measure worry. Measures of worry tend to focus on the content of worries (i.e., what is being worried about), the frequency of worry (i.e., how often worry episodes occur), or trait worry (i.e., the predisposition towards worrying across situations; Gladstone et al., 2005). While literature on worry intensity specifically is sparse, some researchers have attempted to better understand the intensity of worry and how intensity is related to other individual characteristics. Often these researchers use measures of trait worry like The Penn State Worry Questionnaire or measures of worry frequency and then make interpretations regarding intensity from frequency data (Donovan et al., 2017; Pretorius et al., 2015). However, other researchers have investigated worry intensity by using measures that ask individuals to rate their worry intensity in general (i.e., the intensity of worry in the past hour; Thielsch, Andor, & Ehring, 2015). Still other researchers have focused on the specific content of worries when measuring worry intensity, asking participants to rate intensity based on individualized worry content or specified content areas (Silverman, La Greca, & Wasserstein, 1995; Verkuil, Brosschot, Meerman, & Thayer, 2012).

With the availability of various measures of worry intensity, it is important to understand what an instrument is intended to measure, how it measures the construct, as well as associated strengths and limitations. Though different ways of measuring worry, such as worry intensity, worry frequency, and trait worry are unique and distinct, they are also related with some studies finding that mean worry frequency and mean worry intensity, as well as worry intensity and trait worry are significantly correlated (Eysenck & Van Berkum, 1992; Thielsch et al., 2015). Studies that use measures focused specifically on worry intensity have found that general worry intensity is related to personality characteristics, negative cognitions, and trait worry (Bassols et al., 2014; Gladstone et al., 2005; Thielsch et al., 2015). Studies that use measures that ask specifically about worry intensity by inquiring about specific worry content have found that worry intensity is related to changes in childhood development, performance in competition, as well as individual differences within job professions (Silverman et al., 1995; Swain & Jones, 1996; Verkuil et al., 2012).

Thus, when choosing a measure of worry intensity, it can be useful to consider what other constructs are being examined. Additionally, it is important to recognize that measures claiming to examine worry intensity, but actually measure frequency are limited. These measures do not fully examine the extent of the worries. Therefore, if the purpose of a study is to measure worry intensity, it is best to use a measure that either asks specifically for individuals to rate their worry intensity at different times or to rate their worry intensity in relation to provided worry content. The current study follows the approach of asking individuals to rate their worry intensity in relation to content and provides participants the opportunity to rate their worry

intensity along a scale of 1 (not worrisome at all) to 7 (very worrisome) in response to general areas of concern for student teachers. This measure is therefore focused specifically worry intensity and examines the extent of the worry intensity under situational conditions. Although accurately measuring worry intensity is an important task in order to learn more about the construct, it is also important to examine related constructs that may be relevant to an individual's overall worry experience.

Stress Reactivity

Apart from worry and anxiety, people also demonstrate other responses to stressors such as the activation of the stress response system. The stress response system is comprised of a set of neural networks distributed throughout the brain (Perry, 2017). Together these networks help humans respond to novelty, challenges, and threats by regulating functions including the limbic hypothalamic pituitary adrenal (LHPA) axis and the autonomic nervous system (Perry, 2017). Thus in times of stress, both worry and the stress response system can activate, but what exactly is stress? Stress can be defined as the emotional and physiological reactions that result because of a person-environment interaction where an individual perceives a stressor (i.e., demands, situations, circumstances) to be possibly harmful, unmanageable, and disruptive to the individual's equilibrium (Lloyd, King, & Chenoweth, 2002; Schlotz et al., 2011). Though stress, like worry and anxiety, is usually conceptualized as a negative response, it is useful as long as the level of stress is appropriate given the stressor and the amount of stress does not inhibit other response capabilities (Gassull et al., 2010). Thus, stress becomes problematic when the stress-inducing situation has

marked intensity, frequency, and duration that exceed an individual's response capabilities (Gassull et al., 2010).

Though stress is common, there are individual differences that occur in the response to stressors; these differences are referred to as stress reactivity (Schlotz et al., 2011). The individual differences evident in stress reactivity encompass a group of response systems including cognitive, behavioral, emotional, and vegetative, which determine the effects of external stressors on the individual (Gassull et al., 2010). When individuals are high in stress reactivity it means that they have a low threshold for stress and demonstrate highly reactive stress responses (Levens, Elrhal, & Sagui, 2016). On the other hand, individuals who are low in stress reactivity have a higher threshold for stress and thus situations must be more stressful in order for their stress response to initiate (Levens et al., 2016). Thus, stress reactivity not only encompasses many systems in the body (i.e., cognitive, behavioral, etc.), it also spans a large range of intensity in terms of strength of the stress response.

Since stress reactivity is related to many bodily systems, it is not surprising that it is also related to many psychological constructs—stress is impactful. High stress reactivity has been associated with an increase in depressive symptoms, a finding that is strengthened when individuals have faced chronic stress (Levens et al., 2016; Schlotz et al., 2011; van Eck et al., 1996). Results from other studies have similarly demonstrated a relation between stress reactivity and anxiety (Jackowska et al., 2018; van Eck et al., 1996). In a study that compared low stress reactivity groups with high stress reactivity groups, significant differences were found in positive and negative affect, frequency of stressful events, and psychosomatic symptoms (van Eck

et al., 1996). Other studies have also demonstrated that stress reactivity is inversely related to personality variables like self-efficacy, with results showing that individuals with low perceived self-efficacy (i.e., believing that there is an inability to control behavior) tend to show higher levels of stress reactivity (Schlotz et al., 2011).

The relation between stress reactivity and personality variables has also been found in adolescents, with stress reactivity being inversely associated with emotional stability, extraversion, and openness (Britton et al., 2017). Additionally, hyper stress reactivity in adolescents has been associated with negative emotionality, anxiety, and depression (Allwood, Handwerger, Kivlighan, Granger, & Stroud, 2011). Within the adolescent age group, stress reactivity has also been associated with measures of mental toughness, as well as situational variables like social context, peer pressure, and the nature of the stressor (Britton et al., 2017).

Apart from the adolescent age group, stress reactivity has also been related to sex and birth weight. This line of research is helpful in understanding how gene-environment interactions may play a role in stress reactivity. Sex has been found to be associated with stress reactivity, with females demonstrating higher stress reactivity and males demonstrating lower stress reactivity (Levens et al., 2016; Schlotz, Phillips, & Hertfordshire Cohort Study Group, 2012). Birth weight was also related to later stress reactivity, though the relationship was non-linear. Instead, results demonstrated a U-shaped function with babies at the lower and upper ranges of birth weight later reporting higher levels of stress reactivity (Schlotz et al., 2012). This finding was still significant after controlling for early childhood adversity, recent adversity, and chronic stress (Schlotz et al., 2012). The findings relating sex and birth

weight to stress reactivity demonstrate how stress reactivity is associated with individual characteristics in early development.

Stress reactivity has also been studied in context of professions that are considered high stress, such as teaching. One study examined teachers and found that the rate of voice problems was significantly higher in the teaching group than the control and that those teachers with voice problems (as measured by elevated scores on the Voice Handicap Index) had significantly higher reactivity to stress (Gassull et al., 2010). Taken together, this finding, along with the others, demonstrates that situational factors are important to stress reactivity and the strength of the stress response. Thus, stress reactivity, like worry, can be situational and exist along a continuum of intensity, and at proper levels is adaptive and useful.

Measuring stress reactivity. There are many methods for measuring stress reactivity. Some methods focus on the physiological markers of stress, using measures of cortisol levels in the body. Cortisol is often used because it is a result of hypothalamic-pituitary adrenal axis (HPA) activity and the HPA axis is a component of the stress response system (Schlotz, Hellhammer, Schulz, & Stone, 2004). Thus, changes in cortisol levels indicate how the stress response system is reacting. The use of physiological measures can be beneficial as the approach objective by measuring a physiological change. However, this approach is accompanied by some financial and time limitations, as well as the drawback that physiological measures can sometimes be more invasive (Britton et al., 2017). Another way to measure stress reactivity is through self-reports, like the Perceived Stress Reactivity Scale (PSRS).

The PSRS is used to measure an individual's self-report of typical stress response to different situations (Britton et al., 2017). In addition to providing an overall total stress reactivity score, the PSRS also includes five subscales, which provide more information about reactivity tendencies in specific types of situations. The five subscales are reactivity to work overload (i.e., feeling nervous or irritated because of a high workload), reactivity to social conflicts (i.e., feeling affected by social conflict), reactivity to social evaluation (i.e., feeling nervous because of social evaluation), reactivity to failure (i.e., feeling disappointed because of failure), and prolonged reactivity (i.e., difficulty with relaxing after a high workload; Schlotz et al., 2011). Measuring the stress response through the PSRS can be beneficial because it focuses on situational factors that may impact stress reactivity.

Overall stress, like worrying, can be adaptive when responding to novel or threatening situations. However, when stress impedes an individual's response to the situation because of excess in terms of frequency, intensity, or duration then the stress is maladaptive. Stress is also related to many physiological response patterns, some of which are also implicated in worry and anxiety. It makes sense that these two responses, worry and stress, may be related in certain situations because of the nature of the response and the similar physiological patterns. Thus, it is important to examine the research behind this link.

Relations Between Worry and Stress in Teachers

One way that worry and self-reported stress reactivity have been united in the literature is through their association with intolerance of uncertainty. Intolerance of uncertainty refers to the way that an individual responds to and understands the

uncertainty in her life (Zlmoke & Jeter, 2014). Higher intolerance of uncertainty has consistently been related to higher levels of worry and more frequent worry (Zlmoke & Jeter, 2014). Similarly, intolerance of uncertainty has been related to heightened experience of daily stress and a high frequency of stressful major life events (Zlmoke & Jeter, 2014). Studying the impact of stressful events, as well as related constructs, is important because stressful events trigger both the stress response system and perseverative thoughts about the events (Verkuil et al., 2012). Additionally, worrying about stressful events has been found to prolong the duration of the stress response on physiological functioning (Verkuil et al., 2012).

The association between worry and stress has also been examined within the teaching profession because of the high stress nature of the job (Herman, Hickmon-Rosa, & Reinke, 2018). Much research has examined teacher burnout, which refers to a state of physical and emotional exhaustion due to work (Fives, Hamman, & Olivarez, 2007). In fact, better understanding teacher burnout and teacher stress has been critical in also understanding why between seventeen and forty-four percent of teachers leave the profession within their first five years (attrition) while another ten percent move to different schools or districts (turnover; Gray & Taie, 2015; Ingersoll et al., 2018).

Interestingly, the literature indicates that teachers report similar conditions elicit worry and stress. In one study, student teachers reported being worried about not being regarded as a real teacher, dealing with disruptive behavior, becoming a disciplinarian, teaching correctly, planning correctly, teaching about sensitive topics, dealing with the workload, not having enough practice teaching, and being evaluated

(Kyriacou & Stephens, 1999). Similarly, a study with Norwegian teachers found that they were stressed out by the high workload and time pressures, adapting the instruction to meet students' needs, dealing with disruptive behavior, dealing with conflicts with administration, and addressing teamwork issues with other teachers (Skaalvik & Skaalvik, 2015). Another study that examined stress in public school teachers found that they report being stressed about disruptive students, non-supportive parents, performance evaluations, and high stakes testing (Faulk et al., 2013). Thus teachers tend to report being both worried and stressed about situations involving disruptive student behavior, the correct and effective teaching of material to students, and how others perceived and evaluated them.

Teachers encounter these types of situations daily, which can lead to high levels of stress and worry. High teacher stress tends to also be associated with psychological distress, poor health, and absenteeism (Anderson, Levinson, Barker, & Kiewra, 1999; Montgomery & Rupp, 2005). These daily encounters have been helpful in understanding the stress and worry that teachers face because daily events are better at predicting changes in psychosomatic health compared with stressful major life events (Montgomery & Rupp, 2005). One study involving teachers examined both daily worry episodes and daily somatic health complaints related to the stress response system (Verkuil et al., 2012). Results indicated that both worry frequency and worry intensity could significantly predict the number of reported somatic health complaints (Verkuil et al., 2012). Additionally, worry intensity was significantly related to the number of stressful events that teachers encountered, again emphasizing the intricate linkages between worry and stress (Verkuil et al., 2012).

Despite the large focus on stress and worry in teachers, research has often overlooked the similar experiences that student teachers face. Research examining stress and worry in student teachers may be sparse because often stress and worry are expected as being part of the norm in training programs (Chaplain, 2008). However, some research has indicated that student teachers experience similar stressors to professional teachers such as managing behaviors, dealing with administration, completing lesson planning, and facing time pressures (Faulk et al., 2013; Kyriacou & Stephens, 1999). Although student teachers face some of these similar stressors, they also experience additional unique stressors such as facing the pressure of evaluation from mentors, feeling role conflict between being a teacher and a student, managing time commitments, and addressing negative attitudes from mentors and instructors (Chaplain, 2008).

Thus, the student teacher population faces stressors from multiple sources daily. Some have even suggested that teacher burnout may begin to develop during the student-teaching experience because of these daily experiences with stress (Horgan, Howard, & Gardiner-Hyland, 2018). Future research should further investigate stress and worry in this population because of the lack of existing research and the unique factors impacting student teachers. The current study addresses this need to investigate experiences of stress and worry in student teachers with potential implications including improving supports for student teachers and making adjustments to teacher preparatory programs during the intensive practicum teaching experience.

The Current Study

Extensive research exists on the broad constructs of worry and stress. Much research has also examined the experiences of teachers, largely because of the documented high rates of attrition from the profession. Despite the research examining these topics more generally, little research has examined specific areas within these constructs. For example, although proposed models of worry and existing research suggest that worry may be situational and exist on a continuum of intensity, little research has directly examined this (e.g., Dugas et al., 1998; Marks & Nesse, 1994; O'Neil & Abedi, 1992; Ramos et al., 2013). Similarly, while the stress response has been studied extensively in terms of correlates and physiological functioning, its specific relation to worry intensity has been largely overlooked.

This study involved examining correlations between worry intensity in seven specific situations and self-reports of stress reactivity in a variety of conditions. It was expected that higher worry intensity across situations will be related with stress reactivity because worry can prolong and increase the stress response (Verkuil et al., 2012). Additionally, this research examined whether worry intensity is more of a person-level characteristic and is stable across different situations or whether it is situational and changes based on the situation presented. This study also examined the reasons that student teachers provide in interviews to explain their worry intensity rating for each of the situations.

Worry and stress have also been studied in teachers because it is viewed as a high stress profession with some literature indicating that around twenty-five percent of teachers regard their job as very or extremely stressful (Horgan et al., 2018).

Additionally, although teachers face daily stressors, it has been suggested that student teachers face similar stressors as well as additional unique stressors (Chaplain, 2008). Student teachers are often overlooked, although the high level of stress that they face may contribute to the development of burnout later in their careers (Horgan et al., 2018). Thus, it is important to research specific aspects of worry (i.e., worry intensity and situational worry) and stress within the student teacher population. Additionally, it is essential to study the reasons that student teachers provide for their worry intensity ratings. Understanding the reasons provides information about how individuals worry, not just what is worried about. Through identifying subjective aspects of the situation that contribute to worry intensity for a particular individual in that situation, more specific targets of interventions can be pinpointed. This research could also be instrumental in better supporting teachers earlier during their training and inform teacher preparation programs.

Research Questions

This research addressed four questions using a mixed methods approach:

1. How much do student teachers worry about common teaching situations? Gaining a better understanding of what is worrisome to student teachers and relative differences in worry intensity among common situations is a main goal of the current study.

2. To what extent is worry intensity a function of the situation or individual characteristics of the person? Given the fact that worry can be influenced by situational context, it is important to specifically examine the extent to which worry intensity is situational (Muris, van Zuuren, & De Vries, 1994). Since worry intensity

has not been extensively studied, there is little research on whether worry intensity is situational. The most relevant literature that applies to situational worry discusses specific presentations of anxiety disorders. Thus, given the literature's implication that worry has a situational basis and exists along a continuum of intensity, it was hypothesized that worry intensity would be situational.

3. How do student teachers describe their experiences with worries? Given the scarcity of research on worries in this population and that the most recent investigation is from 1999, it is important to update the understanding of the student teacher experience. The ways in which student teachers reason about their worries has not been extensively studied and such information may provide insights that may be useful for teacher preparation programs.

4. How does worry intensity relate to the reasons given about worry intensity and perceived stress reactivity? Since both stress reactivity and worry intensity represent levels of response to an external stressor, it was expected that the two would be related. Though this association is logical given the basis in the stress response system, this relation has not been extensively studied, especially within the high stress student teacher population.

Chapter 3: Research Methods and Research Design

Study Design and Procedure

This study used a mixed methods approach to investigate worry experiences of student teachers during their pre-service teaching year. The data used in this study came from a larger research project, conducted by Dr. Teglasi and a team of graduate students, investigating undergraduate student teachers in their practicum year of training. The following procedures refer only to the tasks in the overall project related to the data used in the current study, for a review of the full procedures for the entire project see Appendix C.

Student teachers were recruited from their University of Maryland College of Education practicum seminar classes where graduate researchers presented the opportunity to the students and explained the purpose of the study and the requirements of those who chose to participate. Interested students provided their contact information so that the graduate researchers could contact them and set-up a meeting time. At the first meeting, which occurred in the middle of the fall semester, the student teachers were provided informed consent and then were asked to fill out multiple surveys including the PSRS and complete other tasks that are not a part of the current study. Towards the end of the fall semester, student teachers returned for another meeting in which they participated in the structured worry intensity interview and filled out the worry intensity rating scale. The interview was audio taped for later coding and transcription purposes. Both meetings took about an hour and a half each per participant. Graduate researchers were trained on how to properly administer the interview, which included reviewing instructions and follow-up questions under the

supervision of an experienced graduate researcher prior to administering the interview.

Participants

Since the data used in this study comes from a larger research project, this study focused only on a subset of available data, which includes a quantitative rating scale and a qualitative interview about worries concerning the upcoming semester of student teaching as well as a measure of perceived stress reactivity. Participants with completed rating scales for worries and perceived stress reactivity and an audio recording of the interview were included in this study. Seventy-one participants were part of the overall research project, but ten did not meet the criteria for inclusion. Thus, the remaining sample consisted of sixty-one undergraduate student teachers (2 male, 59 females) between the ages of nineteen and twenty-six years old ($M = 21.26$, $SD = 0.96$). The participants were recruited from the University of Maryland College of Education from seminar classes connected to the practicum teaching experience. The majority of the sample (60.7%) was White/European American, however the sample was moderately diverse in terms of racial and ethnic diversity as it also included African American (6.6%), Asian American/Pacific Islander (11.5%), Hispanic/Latino (9.8%), Middle Eastern/Arab (1.6%), and Multiracial (9.8%) participants.

Measures

Worry intensity rating scale and structured interview. Student teachers rated their worry intensity about situations related to the teaching experience. They also completed structured interviews with graduate researchers so that they could

expand on their experiences of worry about the situations. The worry intensity rating scale and structured interview can be found in Appendix D.

Worry intensity rating scale. The worry intensity rating scale was developed by graduate students and Dr. Teglasi in the Temperament and Narratives Lab at the University of Maryland. The purpose of the scale development was to allow for student teachers to rate their worry intensity about situations that commonly elicit worry during the intensive student teaching practicum. The situations were identified through a review of relevant literature. The rating scale consists of seven items that describe conditions associated with stressful professional experiences or specific teaching experiences. The situations referenced in the scale encompass a large range of potential experiences including: situations involving burnout, time management, classroom management, meeting various responsibilities, apathetic students, teacher workload, and messing up. Student teachers rated their worry intensity for each situation by scoring the item from 0 (the condition does not worry them at all) to 7 (the condition is extremely worrisome). In addition to the worry intensities for each situation, an overall average worry intensity was also produced by calculating the mean from the situations. The internal consistency for this scale was within the acceptable range for research with a Cronbach's alpha of 0.66 (N= 60). The Cronbach's alpha also suggests that using an average worry intensity across the seven situations would be appropriate.

Coding and analytic procedures for the structured interview. The structured interview accompanying the worry intensity rating scale includes specific questions for different ranges of worry intensity responses as well as follow-up

questions that are asked of all of the participants. This interview is audio recorded and then transcribed by graduate student researchers.. Initial attempts to categorize reasoning suggested five categories that could be drawn from the responses and fit with findings reported in the literature. The five categories lend themselves to coding that is reliable and encompasses the content. The exploratory coding process to develop the five coding categories was iterative and involved one graduate researcher and the faculty principal investigator reading interview responses and identifying common themes between them. Once common themes were identified, similar themes were combined and then considered within the different models of anxiety and worry reviewed.

One of the five categories is past experience with the content. First interviews were coded for the presence of a reference to past experience. Then the experience was further coded as positive past experience, negative past experience, or vicarious experience. Past experience is an important contributor to worry intensity because increased familiarity with a situation decreases the uncertainty around the situation and thus decreases the intensity of worry (Dugas et al., 1998; Ramos et al., 2013). The interviews were also coded for uncertainty, which represents whether uncertainty about the situation is included as part of the reasoning. During exploratory coding, it was noted that several student-teachers explicitly provided uncertainty as a reason for the worry intensity rating. Additionally, as previously discussed, uncertainty plays an important role in anxiety and worry frequency (Zlomke & Jeter, 2014), making it a helpful coding category.

Another coding category is multiple roles, which represents whether having multiple roles (i.e., having responsibilities of both a student and a teacher, or being regarded as someone with two roles—a student-teacher) is discussed in the reasoning. Having multiple roles is one of the additional and unique stressors of student teaching, so it is important to understand how that relates to reasoning about worry. Additionally, the reasons were coded for stability of the problem presented. Again, the interviews were first coded for whether the stability of the problem was referenced. Then it was further coded for whether the student-teachers viewed the problem as persistent and unchanging or changeable Finally, the reasons were coded for how the student-teacher perceived change occurring. Again, the interviews were first coded for presence or absence of reference to a process for change. Then they were further coded for whether student-teachers viewed changes to the problem as externally driven, internally driven (agent change), or a combination. These codes will help describe how individuals reason about their worry intensity and may offer insight about what reasons mitigate or exacerbate worry intensity.

After exploratory coding was done to establish coding categories, a team of two graduate researchers coded the interviews to better understand the reasons student teachers' provided in support of the worry intensity score. The process followed recommendations of Syed and Nelson (2015) by first deciding on a unit of analysis. In this study, the response to each situation was coded and each situation received its own set of codes. In addition, each response was examined and the first portion of the response to the question that was given, without additional prompting from the interviewer, was coded. The two graduate researchers collaboratively made

determinations about the portion of the response to be coded. Next a coding manual was developed. The codes in the manual, as previously mentioned, were developed by both a theory-driven top-down approach as well as an inductive data-driven bottom-up approach (Syed & Nelson, 2015). After developing the coding manual, the two graduate researchers were trained. The training followed the recommended three-step process with both graduate researchers receiving the coding manual and discussing it detail. Then the graduate researchers practiced using the coding scheme on sample data randomly chosen from the data set. These initial codes were discussed in depth and necessary revisions to the coding manual were made to improve clarity (Syed & Nelson, 2015). The graduate researchers then began coding.

Inter-rater reliability. A gold standard/master coder approach was used to establish reliability where the first author coded all of the interview responses in the data set and the second rater coded twenty percent of the total data set (Syed & Nelson, 2015). Percentage agreement and the kappa statistic are both reported (see Table 1) to establish inter-rater reliability. Percentage agreement represents the ratio of items that the two coders agreed on to the total number of items (Syed & Nelson, 2015). Across all codes and situations, the percentage agreement between coders ranged from 85%— 100%. While percentage agreement is a straightforward and widely used approach, the kappa statistic is an alternative method for calculating reliability that accounts for chance agreement between coders (McHugh, 2012). All kappa statistics were in the acceptable range and statistically significant. Across situations and codes the statistic ranged from .58—1.00.

Perceived Stress Reactivity Scale (Schlotz et al., 2011). Student teachers rated their own stress reactivity (i.e., their perception of their responses to stressors) using the Perceived Stress Reactivity Scale (PSRS) on an online Qualtrics survey. The PSRS is often used to measure a person's typical stress response to different situations because of the ease of administration (completion time is approximately 5 minutes) since it is a self report rather than other more complex measures of physiological stress reactivity. The PSRS is a 23-item questionnaire, which provides an overall stress reactivity score as well as scores for 5 subscales. Each subscale is comprised of 4-5 items and the 5 subscales include: Reactivity to Work Overload (RWO), Reactivity to Social Conflicts (RSC), Reactivity to Social Evaluation (RSE), Reactivity to Failure (RFa), and Prolonged Reactivity (PR). Participants were asked to identify their most typical reaction in response to a stressor. Examples of items include, Item 12: "When something does not go the way I expected…. (0) I usually stay calm (1) I often get uneasy (2) I usually get very agitated."

Since participants completed the PSRS on an online Qualtrics survey, their answers were recorded and then recoded into the proper scores. The first answer in a group of possible responses is coded 0, the second is coded 1, and the third is coded 2. These scores were then copied into SPSS where twelve items were reverse scored in order to calculate the subscales and the total stress reactivity. As reported by Schlotz and colleagues (2011), the internal consistency for the PSRS and subscales are high across samples in the United States, United Kingdom, and Germany. More specifically, the Cronbach's alphas for most of the subscales were within the range of 0.7-0.8, demonstrating high internal consistencies. Additionally, the total stress

reactivity score for the PSRS showed an even higher internal consistency than the subscales with a coefficient alpha above 0.8 for samples in all three countries. In this specific sample, the total scale reliability was 0.86 (N= 60). Most of the subscale Cronbach's alpha coefficients ranged from 0.65 (RSC) to 0.82 (RWO), which is similar to the psychometric properties reported by Schlotz and colleagues (2011). One subscale had a lower Cronbach's alpha than those reported by Schlotz and colleagues (2011), the Prolonged Reactivity subscale (PrR), which had a Cronbach's alpha of 0.41.

Data Analyses

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) (SPSS Inc., 2016) as well as R (R Core Team, 2013). In order to answer the first question—How much do student teachers worry about common teaching situations? — a repeated measures ANOVA was attempted. However the assumption of sphericity, which is necessary for using the repeated measures ANOVA, was violated when checked using Mauchly's test of sphericity (χ^2 (20) = 33.2, p =.03). Thus, this question was examined by looking at descriptive statistics and calculating mean worry intensities and variances for each situation. The second question asked to what extent is worry intensity a function of the situation or individual characteristics of the person? This question was answered by running a variance components analysis to parse out the sources of variance in worry intensity scores. This analysis, grounded in generalizability theory and g-studies, identifies the amount of variability due to the individual person, the situation, and person x situation interaction/unidentified error (Shavelson & Webb, 1991). The variance due to the

person x situation interaction is important for understanding individual and situational differences in worry intensity and it is a limitation of the variance component analysis that the person x situation interaction variance is grouped with unidentified error. Additionally, a principal components analysis (PCA) was conducted to understand psychometrically how many observed variables were being analyzed. Additionally, the intraclass correlation coefficient (ICC) was examined to understand the variance among the worry intensity items compared to the total variance.

The third question addressed how student teachers describe their experiences with worries. This question was answered by identifying the themes underlying the reasons the student teachers provide for their worry intensity ratings. Finally, the fourth question asked whether worry intensity is related to stress reactivity. Multiple point polyserial correlations were run between the measures of stress reactivity and worry intensity including:

a) A point polyserial correlation with the two overall scores of stress reactivity and worry intensity.
b) Point polyserial correlations between worry intensity scores and the five subscales of the PSRS: Reactivity to Work Overload (RWO), Reactivity to Social Conflicts (RSC), Reactivity to Social Evaluation (RSE), Reactivity to Failure (RFa), and Prolonged Reactivity (PR)
c) Point polyserial correlations between the subscales of the PSRS and the total PSRS scores with any worry intensity factors that may emerge.

d) Point polyserial correlations between specific interview codes (i.e., uncertainty and multiple roles) and PSRS total/subscales as well as worry intensity.

Chapter 4: Results

The results are organized by the four research questions: 1) How much do student teachers worry about common teaching situations? 2) To what extent is worry intensity a function of the situation or individual characteristics of the person? 3) How do student teachers describe their experiences with worries during the student teaching year? 4) How does worry intensity relate to the reasons given about worry and perceived stress reactivity?

Research Question #1: How much do student teachers worry about common teaching situations?

This question was answered by calculating descriptive statistics for each situation (See Table 2). The situation with the highest mean intensity worry rating referenced the teacher workload (situation 6; $M = 5.26$, $SD = 1.15$) while the situation with the lowest mean intensity worry rating referenced apathetic students (situation 5; $M = 3.36$, $SD = 1.34$). The other situations varied in worry intensity rating with messing up (situation 7; $M = 3.95$, $SD = 1.72$) and meeting responsibilities ($M = 3.95$, $SD = 1.55$) also being worried about less intensely along the 8-point scale. Classroom management (situation 3; $M = 4.31$, $SD = 1.74$), burnout (situation 1; $M = 4.54$, $SD = 1.68$), and time management (situation 2; $M = 4.75$, $SD = 1.68$) were on average, worried about more, but still less intensely than the teacher workload situation.

Descriptive statistics revealed that worry intensity ratings for situations were variable, encompassing the full range from 0 (the lowest rating) to 7 (the highest rating). Notably, the pattern of ranges did not hold for the highest average and lowest average worry intensity situations. For the highest worried about situation (i.e.,

teacher workload—situation 6) the worry intensity scores ranged from 2 to 7, suggesting that the basal worry intensity about this situation among student teachers was elevated compared to other situations. Conversely, for the lowest worried about situation (i.e., apathetic students—situation 5) the worry intensity scores ranged from 0 to 6, suggesting that the ceiling worry intensity about this situation among student teachers was lower compared to other situations. These patterns can also be seen in Table 2 as well as Figure 1, which depicts the ranges, medians, and quartiles of worry intensity rating scores for each situation, with the situations ordered from lowest to highest mean worry intensity.

Research Question #2: To what extent is worry intensity a function of the situation or individual characteristics of the person?

To examine the extent to which worry intensity is a function of the situation or person, it is important to first understand how the situations in the worry intensity scale relate to one another and hang together. Table 3 contains the Pearson correlations between the worry intensity situations. Burnout (1) was significantly related to Time Management (2; $r = .43$, $p < 0.01$), Meeting Responsibilities (4; $r = .27$, $p < 0.05$), and Teacher Workload (6; $r = .32$, $p < 0.05$). Time Management (2) was significantly related to Apathetic Students (5; $r = .39$, $p < 0.01$). Classroom Management (3) was significantly related to Meeting Responsibilities (4; $r = .42$, $p<0.01$) and Teacher Workload (6; $r = .29$, $p < 0.05$). Meeting Responsibilities (4) was significantly related to Teacher Workload (6; $r= .29$, $p < 0.05$) and Messing Up (7; $r = .27$, $p < 0.05$). Finally, Apathetic Students (5) was significantly related to Messing Up (7; $r = .25$, $p< 0.05$).

To further examine how the situations on the worry intensity rating scale hang together, a Principal Components Analysis (PCA) was conducted using a Varimax orthogonal rotation with all Eigen values set at one. Three components emerged from the analysis, but the first component explained the most variance (33.65%). The scree plot (see Figure 2) and the cross loadings for multiple items support a one-component solution meaning that one observed variable was identified in the analysis. Additionally, Horn's parallel analysis was utilized to determine and confirm the appropriate number of factors to retain. Horn's parallel analysis also supported that a one-factor solution was appropriate. A confirmatory factor analysis was also run to examine the fit indices of the one vs. three factor models. As those results are not central to the current question, they are presented in Appendix E and further research should continue to investigate this scale.

Since the Horn's parallel analysis supported a one-factor solution as most appropriate for the data set, the intraclass correlation coefficient (ICC) was also examined. The ICC measures the relative homogeneity of worry intensity scores within the situation items in relation to the total variation. The ICC for the seven items across sixty-one cases was 0.66; 95% confidence interval [CI] = 0.52, 0.78. This ICC is moderate to good and suggests that there is moderate similarity in worry intensity ratings between different individuals within a situation.

Finally, to answer the research question—to what extent is worry intensity a function of the situation or the person—a variance components analysis (VCA) was run. The VCA is derived from generalizability theory and g-studies (Shavelson & Webb, 1991). A VCA parses the variance to determine what percentage of variance

can be attributed to the individual person, the situation, and the person x situation interaction/unidentified error (Shavelson & Webb, 1991). It was hypothesized that more variance would be attributed to the situation rather than the individual because of the impact that situational context has on experiences of worry and anxiety. The results did not support this hypothesis (see Table 4). Rather, the results demonstrated that relatively more variance in worry intensity was due to the person (19.1%) than the situation (12.7%). The largest source of variance was due to the combination of unidentified error and the person x situation interaction (68.1%). A VCA does not further parse the person x situation interaction from unidentified error so this analysis cannot determine the relative contribution of the person x situation interaction versus unidentified error.

Research Question #3: How do student teachers describe their experiences with worries?

To understand how student teachers describe their experiences with worries and how they reason about rating their worry intensities, their responses to each situation were coded and analyzed. Responses were coded for five categories: past experience, multiple roles, uncertainty, stability of the problem, and process for change. All categories were first coded as present or absent (i.e., the participants referenced the overall category or did not). If present, then three of the codes were divided into subcategories. Past experience was further coded into negative experience, positive experience, or vicarious experience. Stability of the problem was further coded into unchanging or changeable. Finally, process for change was further coded into an external process (i.e., someone else or another entity had to change in

order to change the problem), an internal process (i.e., the student teacher was the change agent), or a combination of the two.

Overall, the coding of the interviews demonstrated a clear pattern of reasoning about worry intensity across four of the situations (i.e., Time Management, Classroom Management, Meeting Responsibilities, and Teacher Workload) most intern-teachers reported a similar pattern of having negative past experience with the situation while viewing the situation as changeable, caused or maintained by external factors (ex. burnout is caused by curriculum mandates, administration, etc.), and multiple roles and uncertainty being present (See Table 5).

Three situations did not follow this pattern—Burnout, Apathetic Students, and Messing Up. The pattern of reasoning responses for the burnout situation was close to the general pattern with most intern-teachers reporting having negative past experiences, viewing it as being externally caused, experiencing multiple roles, and acknowledging uncertainty in the situation (See Table 5). However, most intern-teachers also reported viewing burnout as an unchanging problem. The pattern of reasoning for the apathetic students situation differed greatly from other patterns with there being an almost exactly even split between intern-teachers reporting a negative, positive, or no past experience with the situation (See Table 5). Most intern-teachers viewed the situation of apathetic students as changeable and viewed themselves as the change agent. Additionally, few intern teachers referenced the presence of multiple roles in the situation. Finally, reasoning responses to the messing up situation also produced a different pattern with most intern teachers describing a positive past experience with messing up, while viewing the situation as changeable, viewing

themselves as the change agent, experiencing multiple roles, and acknowledging uncertainty (See Table 5).

There were also some notable overall trends for the multiple roles and uncertainty coding categories. Across all situations except Situation 5 (apathetic students), more student teachers referenced having multiple roles than did not (See Figure 3). Situation 5 (apathetic students) was the only situation where more student teachers (88.5%) did not mention multiple roles when explaining their experience with that situation and reasoning about their worry intensity rating. In terms of references to uncertainty, overall across all situations more student teachers referenced uncertainty than did not (See Figure 4). For a detailed description of the reasoning for each situation please reference Appendix F.

Research Question #4: How does worry intensity relate to the reasons given about worry and perceived stress reactivity?

This hypothesis was tested by examining the relationship between worry intensity scores and ratings on the PSRS using point polyserial correlations. Point polyserial correlations are appropriate to use when one observed variable is categorical and the other variable is continuous (Ogasawara, 2011; Olsson, Drasgow, & Dorans, 1982). The correlations did not support the hypothesis that worry intensity would be related to the PSRS total score ($\hat{\rho} = .26$, $p = 0.054$), although the correlation was trending toward significance (see table 6). Additional correlations were run to examine the relationship between the worry intensity average and the subscales of the PSRS (i.e., Prolonged, Work Overload, Social Conflict, Failure, and

Social Evaluation; see table 6). Only perceived stress reactivity to social evaluation was significantly and positively related to worry intensity ($\hat{\rho} = .32$, $p < 0.05$).

Point polyserial correlations were also used to analyze the relationships between worry intensity and two of the reasoning codes, uncertainty and multiple roles, from the worry intensity interview. Hypotheses were not initially specified because the particular coding categories were not available. Codes for uncertainty and multiple roles were added to the correlations because they were the only two codes that were not further coded into qualitatively different subcategories. Thus, total scores for uncertainty and multiple roles could be calculated and interpreted without losing the integrity of the code. Total scores for the multiple roles as well as the uncertainty codes were calculated by summing the number of situations where those reasons were provided. For example, if uncertainty was provided as a reason for each of the seven situations, then the total for uncertainty would be seven. Thus, the total score for multiple roles as well as uncertainty fell along a range of 0-7. Correlations between these two variables and the worry intensity average score were analyzed to see if there was a relationship between reasoning and worry intensity. The point polyserial correlations demonstrated that reasoning about multiple roles in the situations was not significantly related to worry intensity ($\hat{\rho} = 0.04$, $p = 0.78$). Additionally, reasoning about uncertainty in the situations was not significantly related to worry intensity ($\hat{\rho} = -0.03$, $p = 0.83$).

Finally, the total multiple roles reasoning and total uncertainty reasoning was correlated with the PSRS scores to better understand the relationship between reasoning about worry and perceived stress reactivity. Point polyserial correlations

demonstrated that multiple roles reasoning was not significantly related to any of the PSRS scores (see Table 6). However, uncertainty reasoning was significantly and inversely related to PSRS Total ($\hat{\rho}$ = -0.28, $p < 0.05$), PSRS Prolonged Reactivity ($\hat{\rho}$ = -0.26, $p < 0.05$), and PSRS Reactivity to Failure ($\hat{\rho}$ = -0.33, $p< 0.05$).

Chapter 5: Discussion

This study followed student teachers over the course of their student teaching year and sought to expand the literature on worry intensity in several ways, primarily by investigating the impact of situational context on worry experiences. While much research has investigated anxiety and its impact on cognition and reasoning, little research has examined worry intensity, the impact of situational context on worry intensity, and how individuals explain their worry intensity. To the author's knowledge, this study is the first to analyze how student teachers reason about and explain their worry intensity ratings for seven common teaching situations. Another novel feature of the study is its examination of the relations between worry intensity, stress reactivity, and reasoning about worry.

There were three main findings in the current study. First, results indicated that while both situational differences and person differences contributed to the variance in worry intensity, situational differences contributed relatively less. Despite this, the majority of the variance was explained by both unidentified error and the person x situation interaction. Though not separable from error, this interaction would make sense given that each situation has subjective features to which individuals may respond differentially that would contribute to variance in worry intensity. Though this study did not directly examine the interaction, the study did examine the relation of worry intensity with other person level variables such as types of reasoning about worry intensity and perceived stress reactivity. A second finding was that the reasons participants gave to explain worries differed across certain situations. Finally, the third main finding was that worry intensity was significantly related to

perceived stress reactivity with respect to social evaluation (i.e., a person level variable). The following discussion contextualizes these main results and provide implications for the field.

Situational and Individual Contributions to Worry Intensity

An important finding of the current study stemmed from the variance components analysis. The results demonstrated that, contrary to predictions, 19.1% of the variance in worry intensity was due to the individual characteristics of the person while 12.7% of the variance was due to the situation. The remaining 68.1% of the variation was due to unidentified error and the person x situation interaction. Although, more variance was attributed to the person rather than the situation, the different situations still contributed substantially to the variance in worry intensity. Additionally, other aspects of this study contextualize some individual characteristics of the person that may interact with the situation and contribute to the 68.1% of variance in worry intensity. For example, reasoning about worry intensity is an individual characteristic that may account for some of the person-level variation in worry intensity. However, reasoning trends also changed across different situations, which may also point to variation in worry intensity due to the person x situation interaction. These results point to the importance of further investigating the person x situation interaction and unidentified error that accounted for a majority of the variation in worry intensity. Future research that examines this interaction could have valuable implications for teacher preparation programs in helping student teachers understand how their own individual characteristics and teaching specific situations interact to impact their experiences with worry.

Additionally, it is important to further contextualize this finding in terms of what situational worry means. As previously discussed, worrisome situations, aspects of situations that elicit worry, and aspects of the worry should be differentiated. While there are situations that are commonly identified as worrisome, different aspects of those situations may elicit worry for various individuals. The seven situations examined in this study were ones that were previously identified as worrisome to student teachers (Kyriacou & Stephens, 1999), so worrisome situations were examined in this study. However, the specific aspects of the situation that were worrisome were also investigated in this study by coding how the student teachers reasoned about their worries. Some of the reasoning codes picked up on what student teachers perceived about the situation that made it worrisome. Future research should continue to consider these distinctions and further investigate them.

Explanations of Worry Experiences and Intensities: Important Patterns

The current study revealed several important findings about the worry experiences of student teachers. First, the study revealed that student teachers worried relatively more intensely about teacher workload and worried relatively less intensely about apathetic students. Additionally, this study revealed patterns in how student teachers reason about and explain their worry intensity ratings. These findings are notable because the last known study examining student teachers worries was in 1999 (Kyriacou & Stephens). That study reported on what student teachers worried about, but did not investigate why and how they worried about those situations.

While the Kyriacou & Stephens (1999) study is an important foundation for the current study and others, many changes have occurred for the teaching profession

that impact the day-to-day lives of teachers. For example, over the past 20 years, three laws No Child Left Behind (2001), Individuals with Disabilities Education Improvement Act (2004), and Everyone Student Succeeds Act (2015) have led to many changes in school curriculum and placement of students in classrooms. Specifically, these laws have changed curriculum, mandated high-stakes testing, changed requirements for accountability, and increased supports for students with disabilities to stay in general education classrooms, all of which impact teachers' workload and responsibilities (Gloecker, 2001; Jones, 2007). These changes are not an exhaustive list of all that has changed for teachers and how they are prepared over the past two decades, but these changes illustrate why continuing to understand the experiences of teachers and student teachers is important within an ever changing profession. Thus, this study provides updated information on what, why, and the extent to which student teachers worry about different teaching situations.

When analyzing the reasons student teachers provided to justify their worry intensity ratings, four situations emerged as having substantially similar reasoning patterns: time management, classroom management, meeting responsibilities, and teacher workload. Out of the seven situations, these four situations have more to do with meeting task demands and teaching responsibilities. Student teachers tended to report having negative past experiences with these situations, meaning that student teachers typically had past experiences with the situation that resulted in a negative outcome (i.e., they reported feeling distressed, the situation was detrimental to their learning as interns, etc.). For these four situations, student teachers also reported

viewing these situations as changeable, but being caused or maintained by external forces (i.e., curriculum mandates, district level administration, student behavior, etc.).

However, three situations did not follow this pattern—burnout, apathetic students, and messing up. These three situations may have differed in reasoning patterns because they also have less to do with meeting task demands and are more related to personal issues in these areas. These situations differed from the other four situations in the past experiences that student teachers had with the situation (i.e., apathetic students and messing up), the changeable vs. unchanging nature of the situation (i.e., burnout), and the source for change (i.e., apathetic students and messing up). Specifically, more student teachers referenced having negative past experiences with burnout, burnout being unchanging, and external forces changing/maintaining the burnout. For the apathetic student situation, an almost equal number of students referenced having negative, positive, or no past experiences, but most viewed apathetic students as being changeable and viewed themselves as the change agent. Finally, for the messing up situation, most student teachers referred to having positive past experiences, viewed messing up as changeable, and viewed themselves as the change agent for the situation.

These differences in patterns of reasoning among the situations are important and provide additional insight into why there are differences in worry intensity among the situations. Locus of control theory may be used to contextualize the finding about the changeable vs. unchanging nature of the situation and who the actor for change is (internal or external forces). In this theory, the distinction between the stable and changeable nature as well as internal and external causes is important. Responsibility

for a situation's success or failure tends to not be attributable to the individual when external factors are perceived to be at play (Ajzen, 2002). In this case, external factors may be curriculum demands, administrative requirements, paperwork, and meetings. An external locus of control fits well with the teacher workload situation, which had the relatively highest average worry intensity, where most student teachers viewed the situation as changeable, but caused by external forces. Thus, it is possible that student teachers perceive themselves as less responsible for the outcome and less in control of the situation, which makes them perceive teacher workload as relatively more worrisome.

On the other hand in the locus of control theory, responsibility for a situation's success or failure is attributed to the individual when the situation is perceived as caused by internal factors like ability or effort (Ajzen, 2002). This fits well with the apathetic student situation, which had the relatively lowest worry intensity average, where many student teachers described apathetic students as being apathetic because they were not engaged and that as they teacher they were responsible for putting in the effort to be engaging (i.e., internal forces). Thus, in this situation student teachers may feel more responsible and in control of the situation, which may contribute to the perception of apathetic students being less worrisome.

Teacher preparation programs may be able to use the differences in reasoning to help student teachers frame and reason about their worries. For example, the perception of whether the situation is externally caused or whether the individual can cause/change the situation may impact the extent to which the situation is worried about. From a cognitive theoretical approach, anxiety disorders result from distorted

beliefs that focus on potential threat, which then increases the individual's sense of personal vulnerability (Deacon & Abramowitz, 2004). This theory could help explain why some of the situations, like teacher workload, may be more intensely worried about because student teachers may be overestimating the influence of external factors (i.e., threat) and underestimating their own ability to change the situation (i.e., increased perception of vulnerability). Further, how student teachers frame past experiences as negative or positive may also impact the extent to which they worry about the situation. For example, if a past experience was negative, but is framed as a learning experience that was essential for being prepared to be a teacher, this might elicit less intense worry about a future situation than just framing the situation as particularly negative with no benefits. This type of framing came up frequently in the study, particularly in the messing up situation. Teachers often framed their past experiences with messing up (i.e., teaching something too fast, not addressing a behavioral problem, not preparing enough for a lesson, etc.) as a learning experience that overall was positive for their growth as a teacher.

Teacher preparation programs can use information on student teachers' reasoning to teach student teachers about the impact of their perception and attribution of situational factors on their emotional state. Additionally, teacher preparation programs can work to provide positive and negative examples or vignettes of different commonly encountered situations as well as examples of how student teachers can create change in commonly encountered situations. These changes would provide student teachers with more information and possibilities about the situations that they may encounter and could also help empower them to reframe

teaching situations as opportunities for them to effect change rather than situations caused by others.

Implications of Relations of Worry Intensity, Reasoning about Worry Intensity, and Perceived Stress Reactivity

Finally, this study provided novel findings on the relations between worry intensity, reasoning about worry intensity, and perceived stress reactivity. Contrary to the hypothesis, results demonstrated that worry intensity average was not significantly related to the perceived stress reactivity scale total score. The non-significant relationship between worry intensity average and PSRS was notable given that literature links anxiety to worry and additional literature linking anxiety to stress reactivity (Nitschke et al., 2001; Zlomke & Jeter, 2014). It is possible that the relationship was non-significant because anxiety relates to stress reactivity in a different way than it relates to worry intensity. Another possible explanation is that worry intensity when measured in a teaching specific context relates differently to perceived stress reactivity when measured in a general context.

This explanation may have some support as the worry intensity average was significantly related to the social evaluation PSRS subscale. The finding of a positive and significant relationship between the worry intensity average and stress reactivity to social evaluation is notable and may suggest that social evaluation, though part of a general measure, is also an inherent context in teaching (i.e., evaluations of professors, mentor teachers, students, and co-workers). This idea of general vs. specific measures of constructs being important to results holds some credence with studies of smokers showing that general measures of social competence differed

greatly from social competence in smoking specific situations on several outcome measures including stress response and relapse rates (Abrams, Monti, Pinto, Elder, Brown, & Jacobus, 1987). Similarly, research with individuals with seasonal and non-seasonal depression have demonstrated that the use of season-specific coping measures differs from more general coping measures in the relation to stress and stress reactivity (Sigmon et al., 2007).

Another important finding was that reasoning about worry intensity, specifically referencing uncertainty when reasoning, was significantly and inversely related to total PSRS, PSRS prolonged, and PSRS failure. Past research demonstrates that uncertain conditions increase the stress response (Greco & Roger, 2003) so the inverse relationship found in this study may suggest that acknowledging that there is some uncertainty about situations reduces its impact on perceived stress reactivity. It is also possible that those individuals with lower perceived stress reactivity to prolonged stress and to failure are more likely to acknowledge relevant uncertainty when reasoning about situations. This has potentially valuable implications for teacher preparation programs because programs could help student teachers recognize the uncertainty inherent in some student teaching situations and identify ways that they can cope with that uncertainty.

Interestingly, reasoning about worry intensity by referencing uncertainty, was not related to worry intensity. This non-significant finding was notable because intolerance to uncertainty has been linked with increased worry and increased anxiety (Zlomke & Jeter, 2014). Additionally, others have examined how reasoning under uncertainty is related to trait anxiety with those high in trait anxiety reasoning for less

time and gathering less evidence in order to reduce uncertainty and make a decision faster (Bensi & Giusberti, 2007). However, reasoning about uncertainty appears to be different from the construct of intolerance to uncertainty and the idea of reasoning under uncertainty. While intolerance to uncertainty refers to an individual's inability to endure uncertainty, reasoning about uncertainty may capture an individual's tendency to think about and acknowledge uncertainty when considering how worried they are about a situation. For example, student teachers' responses were coded for presence of uncertainty when they referenced being unsure about future situations or their role in the classroom in the next semester. They often explicitly said that they did not know what was going to happen or what was expected of them in the upcoming semester. Therefore, this ability to acknowledge and discuss the uncertainty seems like it may differ from the construct of intolerance to uncertainty. Further, reasoning about uncertainty may differ from reasoning under uncertainty because reasoning under uncertainty is related to the goal of reducing uncertainty. However, reasoning about uncertainty, as captured in this study, relates to the goal of justifying worry intensity and higher total uncertainty scores reflect student teachers acknowledging and referencing uncertainty across the different situations.

The significant relationship between worry intensity and perceived stress reactivity to social evaluation as well as the significant and inverse relationship between reasoning about uncertainty and perceived stress reactivity have valuable implications for the use of cognitive behavioral techniques in teacher preparation programs. For example, teacher preparation programs may consider using cognitive restructuring to help student teachers think about future teaching experiences more

constructively. Using the four steps to cognitive restructuring outlined by Hope and colleagues (2010), teacher preparation programs could help their students identify problematic cognitions about future teaching experiences, identify distortions within the thoughts (ex. they have no control over their workload), help them dispute those thoughts and develop a rational rebuttal to the thoughts.

Additionally, teacher preparation could consider combining cognitive restructuring with mindfulness training to help student teachers learn how to manage stress reactivity and cope with uncertain and worrisome situations. Mindfulness refers to awareness that emerges through purposefully paying attention and enhancing non-judgmental observation of one's own thoughts and actions (Kabat-Zinn, 1994; Mendelson et al., 2010). Thus, mindfulness is mainly composed of two components: present moment awareness and emotional acceptance. In practice this means acknowledging all of the thoughts that enter the mind (i.e., attention/awareness), but not getting stuck on any one thought or emotion (i.e., acceptance) (Teper & Inzlicht, 2013). Mindfulness training has been shown to relate to reductions in stress (Grossman, Niemann, Schmidt, & Walach, 2004; Poulin, Mackenzie, Soloway, & Karayolas, 2008). Additionally, some mindfulness training programs already exist that are designed specifically for teachers such as Mindful Schools, Stress Management and Relaxation Techniques (SMART-in-Education), and Cultivating Awareness and Resilience in Education (CARE for Teachers), although more research is necessary on the effectiveness of these specific programs as the evidence base is new and still emerging (Roeser, Skinner, Beers, & Jennings, 2012).

Teacher preparation programs could also consider integrating experiences into seminar curriculums that focus on exposure to situations that are worried about. Since social evaluation was the one area of stress reactivity that was significantly related to worry intensity, it suggests that student teachers are worried and stressed about social evaluative situations. Therefore it may be beneficial for student teachers to specifically be exposed to constructive social evaluative experiences repeatedly. Repeated exposure to social evaluative situations that are perceived as constructive and helpful to the student teachers would help lessen the intensity of the stress and worry as well as give them a space to process the experiences in a supportive environment (Abramowitz, 2013). Additionally, teacher preparation programs could provide more training to mentor teachers that student teachers are placed with. The training could include strategies for how to make social evaluative situations constructive and how to integrate evaluation into daily routines so that social evaluation becomes a typical and beneficial part of the student teacher's day-to-day experience.

Limitations, Strengths, and Future Directions

The main limitations of this study are related to some of the measures used as well the demographics of the sample, which limit generalization of results. Specifically, one limitation is the worry intensity interview and rating scale. The scale includes only seven situations. Having a measure with more situations would improve the ability to examine the impact of situational factors. Though this is a limitation, the results of this study are strengthened by the mixed-methods approach that utilized both qualitative and quantitative data collection. Effort was made to obtain rich

reasoning about the worry intensity rating and the individuals' experiences with the situations. Therefore, while a future scale with more situations may be beneficial, in the current study the fewer situations were somewhat balanced by the breadth of information gained from the accompanying interview. Another limitation is that different interviewers administered the worry intensity rating scale and structured interview. Although all interviewers underwent training in order to standardize the administration of the scale and interview, it is possible that interviewers had different communication styles, which could have impacted how student teachers responded. For example, some interviewers only asked the questions specified in the interview protocol while other interviewers asked additional clarifying questions about emotions or specific events that student teachers shared. The structured interview also included different follow-up questions or different wording of follow-up questions depending on the worry intensity rating given. The differences in questions or wording of questions, though typically minimal, could also have impacted the responses. These aspects of the worry intensity interview could have impacted the reasoning codes. Thus, future research should aim to have a more uniformed interview approach to minimize these limitations.

Another limitation was the mixed use of general and specific measures. The worry intensity rating scale and interview are measures specific to student teachers experiences of worry. Conversely, the PSRS, which was used to measure perceived stress reactivity, was a general measure not specific to teaching. Although, one subscale of the PSRS (Social Evaluation) was significantly related to the average worry intensity rating, no other subscales of the PSRS or the total PSRS was related

to average worry intensity rating. This was unexpected given the literature connecting stress reactivity and anxiety as well as literature that demonstrates a relation between anxiety and worry intensity. By adding a general measure of worry intensity and a specific measure of perceived stress reactivity, future research could use both general and specific-to-teaching measures of worry intensity and perceived stress reactivity to examine the impact of contextual framing of these constructs in measures.

Another limitation was that the measures used in this study did not incorporate the broader context of the situations that were worried about. For example, external factors that may have impacted worry intensity such as the quality of the relationship with the mentor teacher, the school climate at the placement, and the level of funding/support that the school placement receives were not considered. These more external factors were not often mentioned in the worry intensity interview so using the current methodology those types of variables were not captured, but present an important additional perspective to contextualize the results. Future research should look to incorporate a more direct measure of the broader context of the situations that are worried about by student teachers.

Finally, generalizing the results from this study is limited by the sample. This sample was 96.7% female and 60.7% white. Additionally, all student teachers in the sample came from one university's teacher preparation program. In some ways these characteristics limit generalizations of the results to all student teachers' experience during their student teaching year. However, the demographics of the sample do reflect trends that are similar to those found in the teaching profession. For example, the National Teacher and Principal Survey was last conducted in the 2015-16 school

year and reported that about 77% of all teachers in the U.S. were women, with that number rising to about 90% in primary schools (Loewus, 2017). Further, about 80% of all teachers in the US were white, 9% Hispanic, 7% African American, and 2% Asian American (Loewus, 2017). Thus, while the sample in the current study was comprised of mostly white participants, the sample included more racial/ethnic diversity than what is reflected in the teaching profession at large. This sample was lacking in male participants and future studies could work to recruit a larger sample of male student teachers. Additionally, while the results cannot be generalized to all teacher preparation programs, University of Maryland prepares student teachers specifically for placements in the surrounding area through trainings and practica before their final student teaching year. Thus, the results may generalize to the experiences of student teachers in preparation programs that follow similar training practices.

Future research should also continue to examine how individuals reason about worry intensity. When analyzing student teachers' reasoning, some results suggested that references to specific reasons (i.e., negative/positive/vicarious past experiences, changeable/unchanging nature of the situation, and external/internal/combination source for change) appeared to vary across situations. However, other reasons like uncertainty were related inversely to the average worry intensity score. Thus, future research should examine what patterns of reasoning are evoked different situations evoke different patterns and what patterns appear to be part of more general reasoning styles of individuals. Future research should also consider incorporating a longitudinal design to investigate how worry intensity may impact teacher turnover,

attrition, and/or job satisfaction. A longitudinal design would allow for researchers to see how the worry intensity variables and reasoning variables impact the student teachers teaching experience over time. Additionally, a longitudinal design that included measures before student teachers began the intern teaching experience would clarify the history of stress reactivity and worry prior to entering the teacher preparation program, which would also help to clarify aspects of the person x situation interaction.

Conclusions

This study uniquely contributed to the literature base as, to the author's knowledge, no known studies have examined the worry intensities of student teachers, how situational context impacts worry intensity, and how student teachers reason about their worries. This study described, analyzed, and explored the reported worry intensities of student teachers, the reasons that student teachers gave to justify their worry intensity ratings, and how patterns in reasoning differed across different situations. Teacher turnover and attrition is a continual problem for the education system in the United States. A study that followed beginning teachers throughout their first five years of teaching found that seventeen percent of the beginning teachers left the profession altogether (attrition) and ten percent had moved to different schools or districts (turnover; Gray and Taie, 2015). Other estimates of teacher attrition during the first five years of teaching are even higher, suggesting that forty-four percent of early career teachers leave the profession in the first five years (Ingersoll et al., 2018). The impact of teacher turnover and attrition also disproportionately impacts high-poverty schools, which tend to experience a roughly

fifty-percent higher rate of turnover than more affluent schools (Alliance, 2014). The costs of teacher turnover and attrition in the U.S.A. are also high, with estimates of the cumulative costs of attrition and turnover reaching between $1 billion and $2.2 billion per year (Alliance, 2014). The results of this study contribute to this important problem through its novel findings on worry experiences of student teachers and the relations between worry intensity, stress reactivity, and reasoning about uncertainty.

These findings have implications for teacher preparation programs to further support their student teachers by collaborating with psychology programs to create additional courses for their students. For example, psychology and education programs could collaboratively develop seminars for student teachers to enroll in that could provide them opportunities to learn about how individual differences in worry and stress reactivity can impact teaching experiences. Further, the seminars could include discussions on cognitive behavioral theory, integrating how though they may feel anxious, worried, or scared about teaching that repeated exposure to the teaching settings will help lessen the intensity of those feelings as well as giving them a space to process the experiences (Abramowitz, 2013). These seminars could also focus specifically on exposing student teachers to constructive social evaluative experiences to potentially lessen the intensity of worry about those situations. Further, mentor teachers could undergo training to help them learn how to create constructive learning experiences when they are evaluating their student teachers. Additionally, the seminars could include instruction on CBT techniques like cognitive restructuring and self-care strategies like mindfulness training. While these findings have implications for teacher preparation programs, the results also point to future directions for

research. Future research can further examine the impact of situations on worry intensity by examining more situational dimensions of student teaching. Future research should also attempt to analyze how general versus specific measures of worry intensity as well as perceived stress reactivity impact relations to one another and to other relevant constructs.

Appendices

Appendix A: Tables and Figures

Table 1.
Reliability for Interview Response Codes

	%	*Kappa Statistic*	*Significance*
Situation 1 (Burnout)			
Past Experience	92	.83	.002
Multiple Roles	92	.84	.002
Uncertainty	85	.70	.008
Stability of the Problem	100	1.00	.000
Process for Change	92	.88	.000
Situation 2 (Time Management)			
Past Experience	100	1.00	.000
Multiple Roles	85	.65	.01
Uncertainty	85	.68	.009
Stability of the Problem	100	1.00	.000
Process for Change	92	.87	.000
Situation 3 (Classroom Management)			
Past Experience	100	1.00	.000
Multiple Roles	92	.63	.015
Uncertainty	92	.76	.005
Stability of the Problem	100	1.00	.000
Process for Change	92	.86	.000
Situation 4 (Meeting			

Responsibilities)			
Past Experience	92	.81	.003
Multiple Roles	85	.65	.012
Uncertainty	100	1.00	.000
Stability of the Problem	100	1.00	.000
Process for Change	92	.88	.000
Situation 5 (Apathetic Students)			
Past Experience	100	1.00	.000
Multiple Roles	85	1.00	.000
Uncertainty	92	.81	.003
Stability of the Problem	92	.76	.005
Process for Change	92	.88	.000
Situation 6 (Teacher Workload)			
Past Experience	85	.44	.05
Multiple Roles	85	.58	.02
Uncertainty	100	1.00	.000
Stability of the Problem	92	1.00	.000
Process for Change	100	1.00	.000
Situation 7 (Messing Up)			
Past Experience	100	1.00	.000
Multiple Roles	100	1.00	.000
Uncertainty	92	.84	.002
Stability of the Problem	92	.85	.002
Process for Change	100	1.00	.000

Table 2.
Descriptive Statistics Worry Intensities per Situation

	M	*SD*	*Minimum*	*Maximum*
Situation 1 (Burnout)	4.54	1.68	0	7
Situation 2 (Time Management)	4.75	1.63	0	7
Situation 3 (Classroom Management)	4.31	1.74	0	7
Situation 4 (Meeting Responsibilities)	3.95	1.55	0	7
Situation 5 (Apathetic Students)	3.36	1.34	0	6
Situation 6 (Teacher Workload)	5.26	1.15	2	7
Situation 7 (Messing Up)	3.95	1.72	0	7

Table 3.
Pearson Correlation Matrix for Worry Situations

Situation	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Burnout (1)	1	.43**	.22	.27*	.10	.32*	.17
Time Management (2)		1	.13	.01	.39**	.20	.18
Classroom Management (3)			1	.42**	.17	.29*	.15
Meeting Responsibilities (4)				1	.22	.29*	.27*
Apathetic Students (5)					1	.16	.25*
Teacher Workload (6)						1	.07
Messing Up (7)							1

* = sig. at 0.05
** = sig. at 0.01

Table 4.
Variance Components Analysis of Worry Intensity

	Variance	Percentage
Person	0.53	19.1
Situation	0.36	12.8
Person x Situation, Error	1.89	68.1
Total Variance	2.78	100

Table 5. Percentages of Student-Teachers who Referenced a Reasoning Code Across Situations with Similarities in reasoning described.

	Negative Experience	Positive Experience	Vicarious Experience	No Experience	Unchanging Problem	Changeable Problem	External Force for Change	Internal Force for Change	Combination of Internal and External	Multiple Roles	Uncertainty
Higher percentages of student teacher references to negative past experiences, the situation being changeable, external forces changing the situation, presence of multiple roles, and uncertainty											
Time Management	**62.3**	27.9	4.9	4.9	31.1	**67.2**	**41**	37.7	21.3	**72.1**	**72.1**
Classroom Management	**62.3**	34.4	1.6	1.6	29.5	**65.6**	**45.9**	21.3	32.8	**80.3**	**85.2**
Meeting Responsibilities	**34.4**	27.9	19.7	18	34.4	**57.4**	**54.1**	26.2	19.7	**67.2**	**83.6**
Teacher Workload	**47.5**	14.8	27.9	9.8	37.7	**62.3**	**78.7**	9.8	11.5	**77**	**85.2**
Higher percentages of student teacher references to negative past experiences, **the situation being unchanging,** external forces changing the situation, the presence of multiple roles and uncertainty											
Burnout	**50.8**	6.6	24.6	18	**54.1**	42.6	**52.5**	31.1	16.4	**55.7**	**73.8**
About equal student teacher references to **negative, positive, and no past experiences and few references to multiple roles**. Higher percentages of references to the situation being changeable, **internal forces** changing the situation, and uncertainty											
Apathetic Students	**32.8**	**34.4**	0	**32.8**	21.3	**70.5**	32.8	**39.3**	27.9	**11.5**	**59**
Higher percentages of student references to **positive past experiences**, the situation being changeable, **internal forces changing the situation**, presence of multiple roles, and uncertainty											
Messing Up	31.1	**39.3**	8.2	21.3	21.3	**50.8**	6.6	**68.9**	24.6	**62.3**	**59**

Table 6
Point Polyserial Correlations Between Worry Intensity, Worry Reasoning, and the PSRS

Scale	1	2	3	4	5	6	7	8	9
Worry Intensity (1)	--	-.03	.04	.26	.13	.13	.17	-.01	**.32***
Worry Reasoning		---	---	---	---	---	---	---	---
Total Uncertainty (2)		---	.21	-.28*	-.26*	-.19	-.03	-.33*	-.20
Total Multiple Roles (3)			---	-.15	-.07	-.24	.03	-.18	-.10
PSRS Total (4)				---	---	---	---	---	---
PSRS Prolonged (5)					---	.44**	.20	.46**	.58**
PSRS Work Overload (6)						---	.38**	.54**	.54**
PSRS Social Conflict (7)							---	.31*	.26
PSRS Failure (8)								---	.40**
PSRS Social Evaluation (9)									---

* = sig. at 0.05
** = sig. at 0.01

Table 7.
Burnout Code Frequencies

	% Mentioned
Past Experience	82
Positive	6.6
Negative	50.8
Vicarious	24.6
Multiple Roles	55.7
Uncertainty	73.8
Stability of the Problem	96.7
Unchanging	54.1
Changeable	42.6
Process for Change	100

External	52.5
Internal	31.1
Combination	16.4

Table 8.
Time Management Code Frequencies

	% Mentioned
Past Experience	95.1
Positive	27.9
Negative	62.3
Vicarious	4.9
Multiple Roles	72.1
Uncertainty	72.1
Stability of the Problem	98.4
Unchanging	31.1
Changeable	67.2
Process for Change	100
External	41
Internal	37.7
Combination	21.3

Table 9.
Classroom Management Code Frequencies

	% Mentioned
Past Experience	98.4
Positive	34.4
Negative	62.3
Vicarious	1.6
Multiple Roles	80.3
Uncertainty	85.2
Stability of the Problem	95.1
Unchanging	29.5
Changeable	65.6

Process for Change	100
External	45.9
Internal	21.3
Combination	32.8

Table 10.
Meeting Various Responsibilities Code Frequencies

	% Mentioned
Past Experience	82
Positive	27.9
Negative	34.4
Vicarious	19.7
Multiple Roles	67.2
Uncertainty	83.6
Stability of the Problem	91.8
Unchanging	34.4
Changeable	57.4
Process for Change	100
External	54.1
Internal	26.2
Combination	19.7

Table 11.
Apathetic Students Code Frequencies

	% Mentioned
Past Experience	67.2
Positive	34.4
Negative	32.8
Vicarious	0
Multiple Roles	11.5
Uncertainty	59
Stability of the Problem	91.8
Unchanging	21.3
Changeable	70.5
Process for Change	100

External	32.8
Internal	39.3
Combination	27.9

Table 12.
Teacher Workload Code Frequencies

	% Mentioned
Past Experience	90.2
Positive	14.8
Negative	47.5
Vicarious	27.9
Multiple Roles	77
Uncertainty	85.2
Stability of the Problem	100
Unchanging	37.7
Changeable	62.3
Process for Change	100
External	78.7
Internal	9.8
Combination	11.5

Table 13.
Messing Up Code Frequencies

	% Mentioned
Past Experience	78.7
Positive	39.3
Negative	31.1
Vicarious	8.2
Multiple Roles	62.3
Uncertainty	59
Stability of the Problem	72.1
Unchanging	21.3
Changeable	50.8
Process for Change	100
External	6.6

Internal	68.9
Combination	24.6

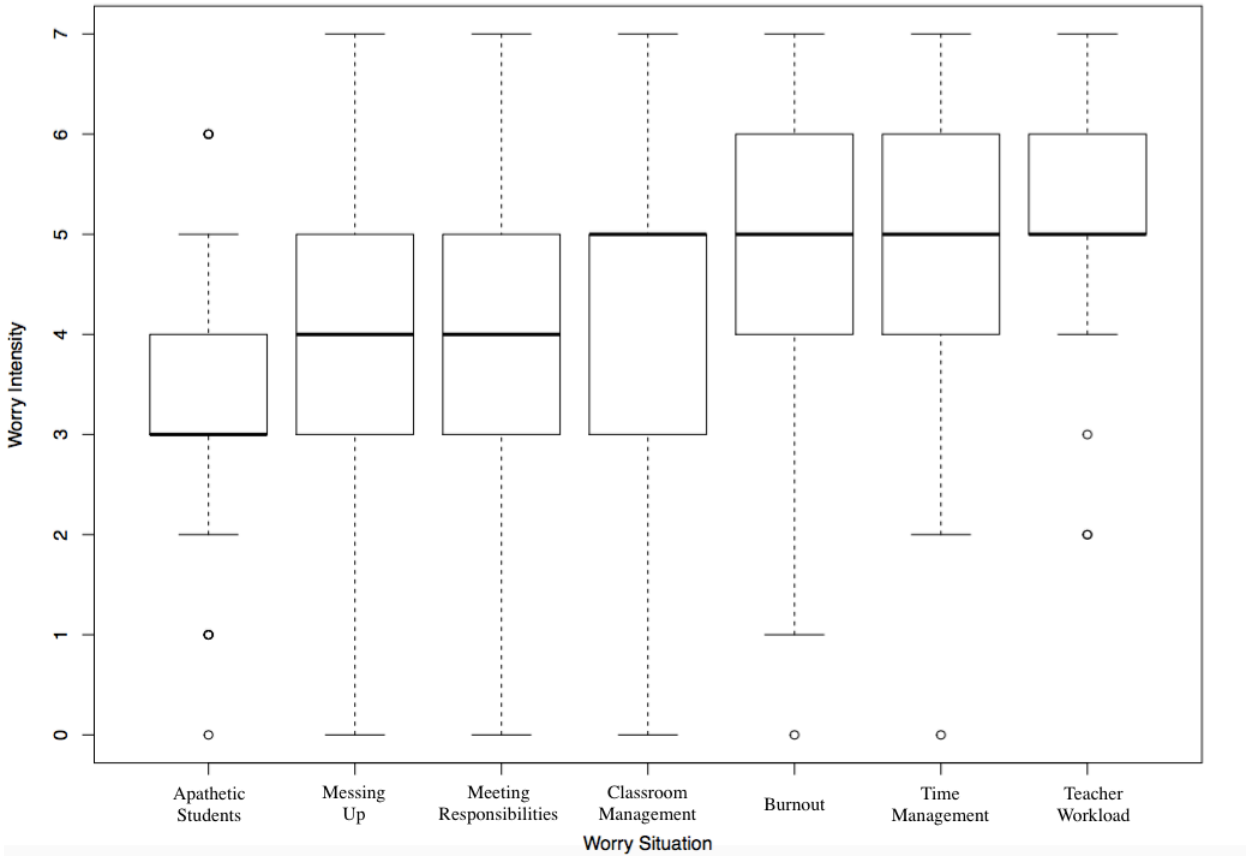

Figure 1. Worry Intensity Boxplots for each situation organized from lowest (left) mean worry intensity to highest (right).

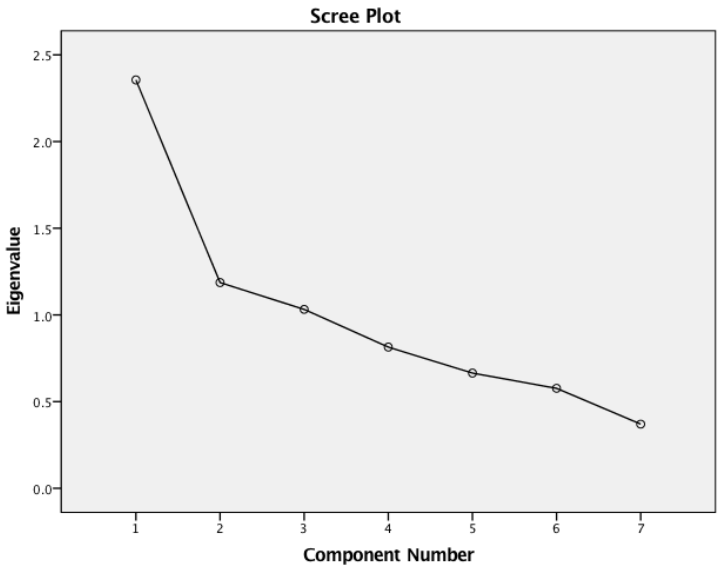

Figure 2. Scree plot from the exploratory factor analysis suggesting a one-factor model for the worry intensity rating scale.

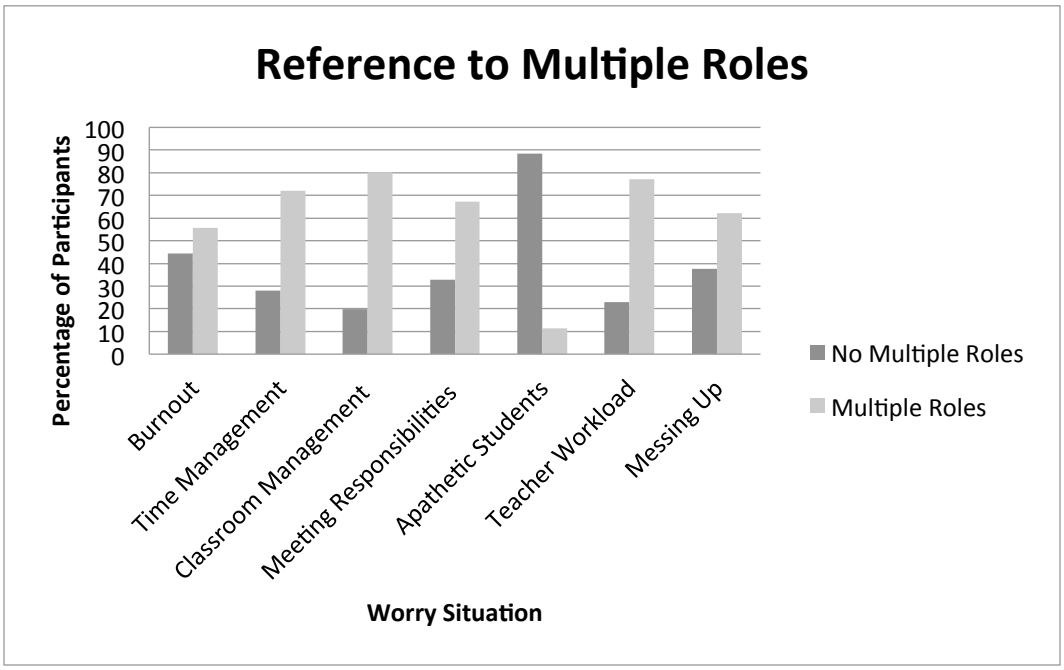

Figure 3. Bar graphs demonstrating the percentage of student teachers who mentioned multiple roles versus not mentioning multiple roles while reasoning about worry intensity scores across the seven situations.

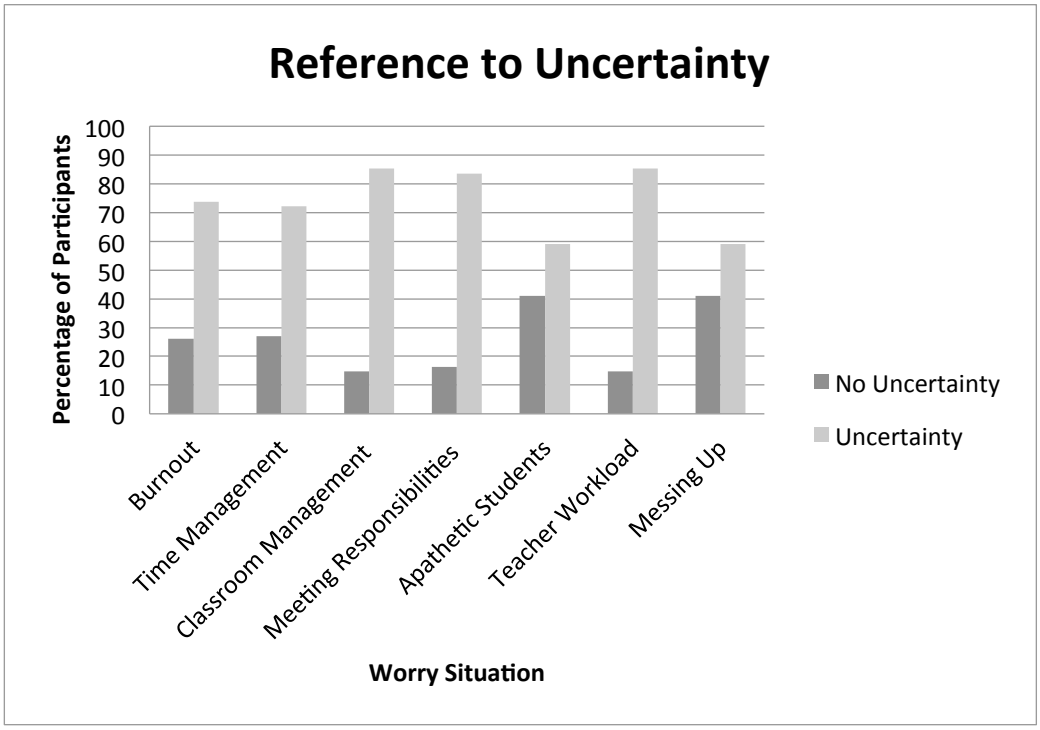

Figure 4. Bar graphs demonstrating the percentage of student teachers who mentioned multiple uncertainty versus did not mention uncertainty while reasoning about worry intensity scores across the seven situations.

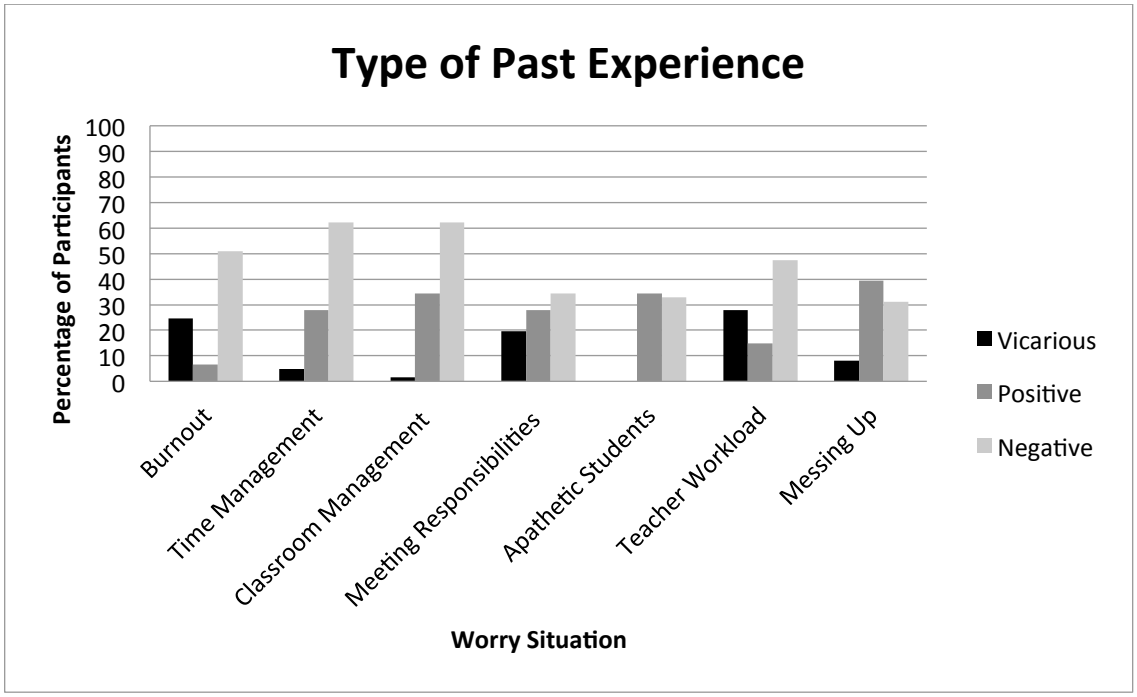

Figure 5. Bar graphs demonstrating the percentage of student teachers who had a vicarious past experience, a positive past experience, or a negative past experience across the seven situations.

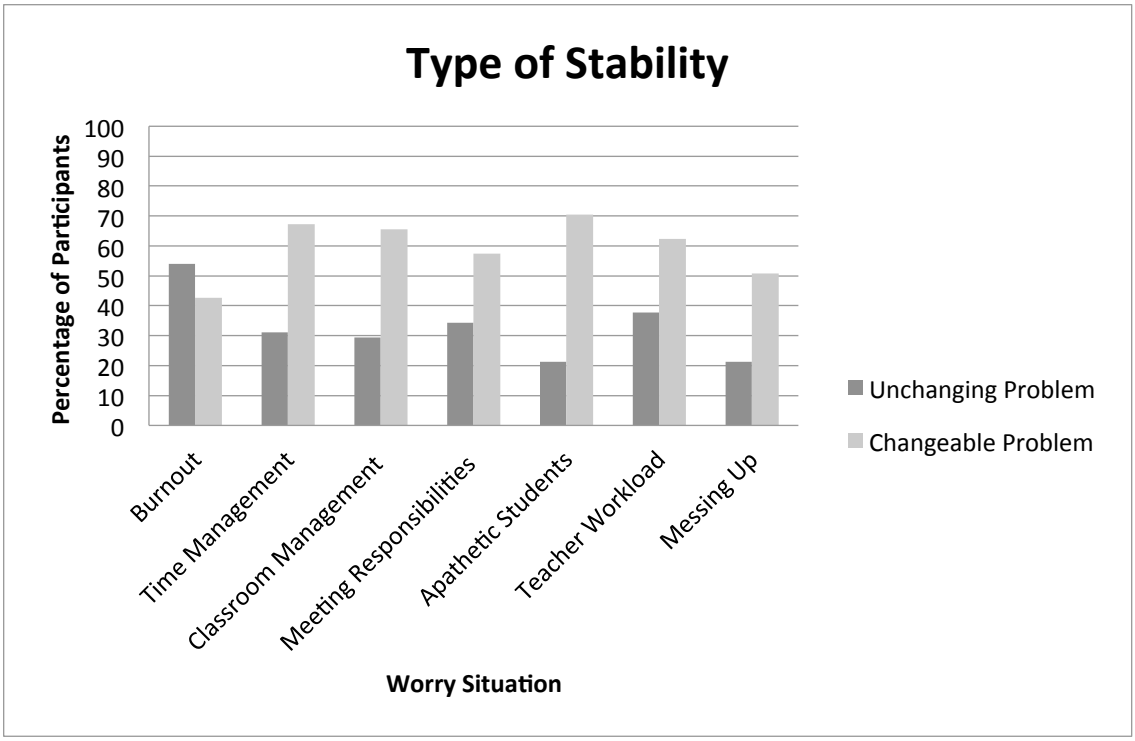

Figure 6. Bar graphs demonstrating the percentage of student teachers who viewed the different situations as unchanging or changeable.

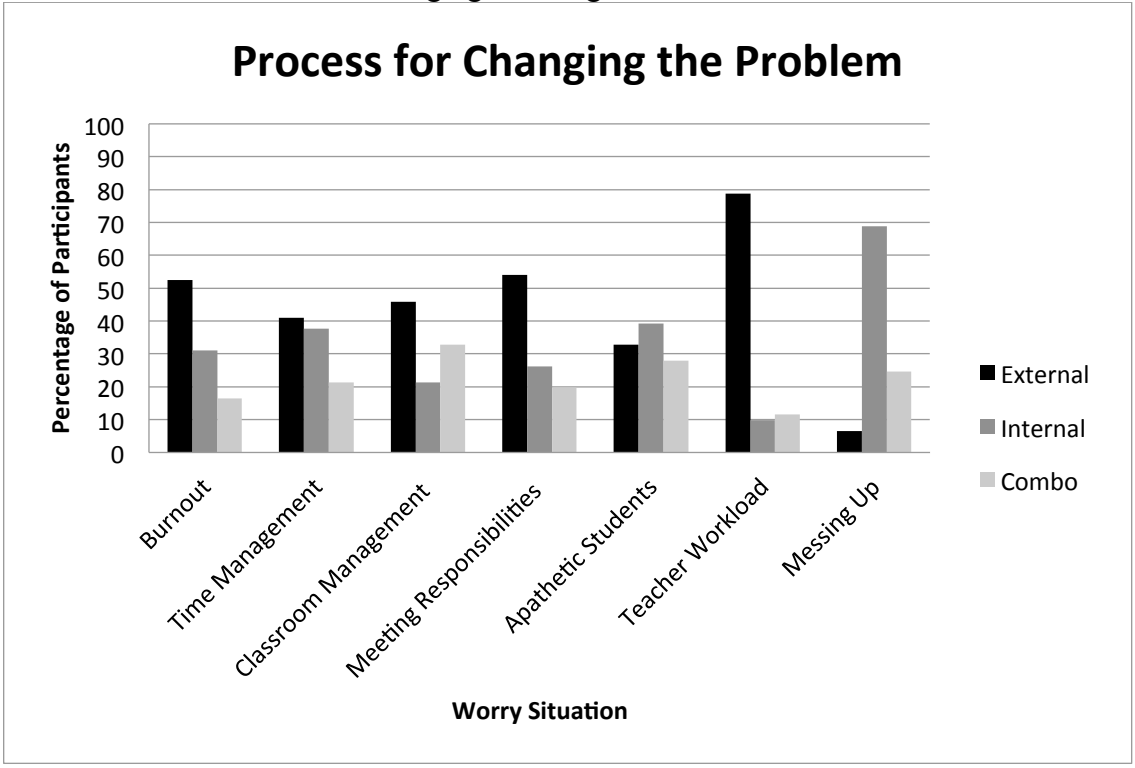

Figure 7. Bar graphs demonstrating the percentage of student teachers designated the process for changing the seven situations as external, internal, or a combination.

Appendix B

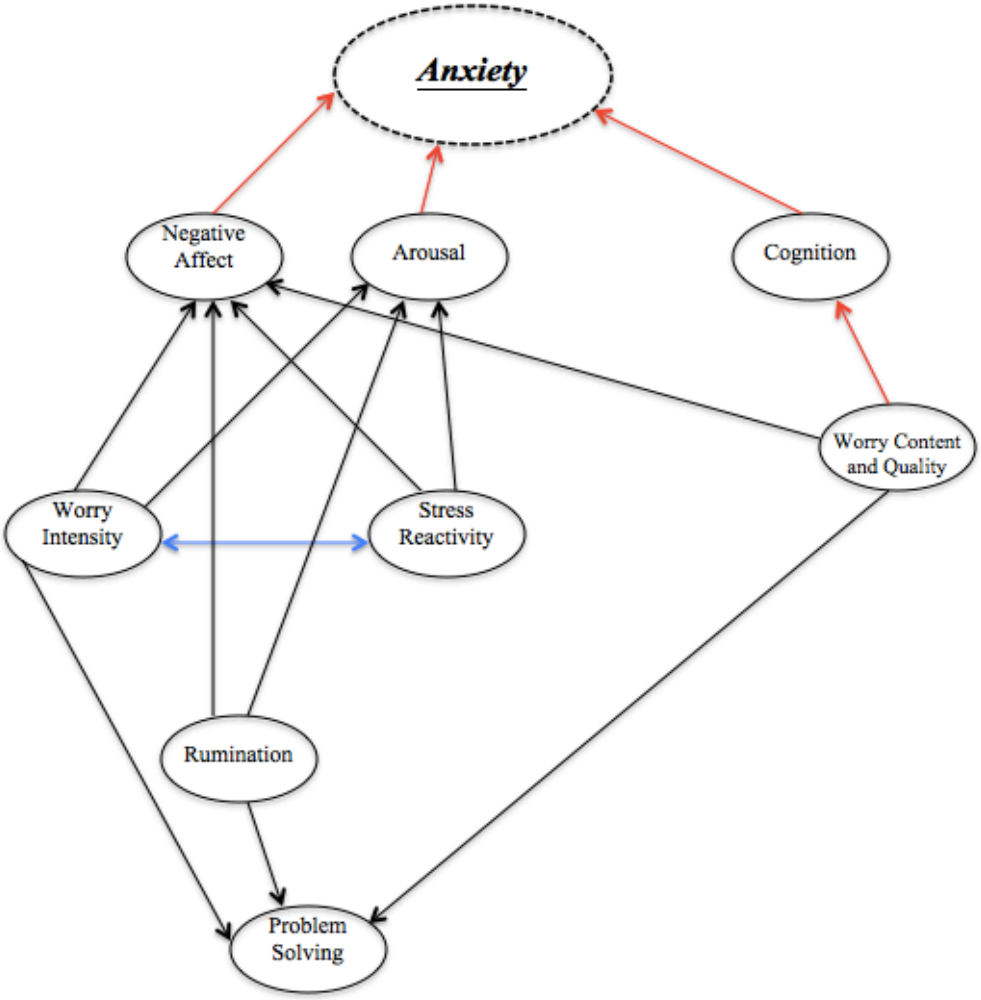

Figure 8. Constructs theoretically related to worry intensity. The relations between three components of anxiety (i.e., negative affect, arousal, and cognition), worry intensity, stress reactivity, worry content, problem solving, and rumination can be seen by the connecting arrows. Red arrows depict constructs that are a component of the construct they point toward. Black arrows represent correlations between constructs from research in the literature. The blue arrow represents a relation proposed by this thesis. The arrows also demonstrate the direction of the relationship. Information regarding these relationships was found through a variety of sources (Gana, Martin, & Canouet, 2001; Nitschke, Heller, Imig, McDonald, & Miller, 2001; Davey, Hampton, Farrell, & Davidson, 1992; Zebb & Beck, 1998; Heller & Nitschke, 1998; Sweeny & Dooley, 2017; Donaldson & Lam, 2004; Lyubomirsky et al., 1999; Hong, 2997

Appendix C

Procedures for the Overall Teacher Stories Project

Student teachers were recruited from their University of Maryland College of Education practicum seminar classes where graduate researchers presented the opportunity to the students and explained the purpose of the study and the requirements of those who chose to participate. Interested students provided their contact information so that the graduate researchers could contact them and set-up a meeting time. The overall research project includes three phases: the fall semester phase, the spring semester phase, and a one-year follow-up. The first phase includes two meetings. At the first meeting, which occurred in the middle of the fall semester, the student teachers were provided informed consent and then were asked to fill out a Qualtrics survey including questionnaires about demographics, perceived stress reactivity, temperament style, coping style, two story-writing activities, and the TAT, which was audio recorded and transcribed. Towards the end of the fall semester, student teachers returned for another meeting in which they participated in the structured worry intensity interview, filled out the worry intensity rating scale, and completed another series of questionnaires asking about recent teaching experiences and another story writing activity on an online Qualtrics survey. The interview was audio taped for later coding and transcription purposes. Both meetings took about an hour and a half per participant.

In phase two of the study, student teachers were in their spring semester and working towards fully taking of the teaching duties in their placement classrooms. In this part of the study, participants responded to three short online writing activities

once every other week for 6 consecutive weeks. Participants were asked to write about recent meaningful experiences relevant to the student teaching experience for at least 20 minutes and participants were also asked to answer questions about their affect and the impact of the event that they wrote about. Phase two concluded with participants having a final meeting with a graduate researcher. In this meeting participants took part in another structured interview that focused on the experiences that they had over the year as well as the ways that they coped. Phase two also included a follow-up with student teachers' field supervisors and mentor teachers to gather information about the student teachers' effectiveness.

Finally, phase three of the study involved an optional follow-up one year later. In this phase, student teachers were contacted by email and asked to respond to an online Qualtrics survey that included questions around the job they currently had, their experiences with teaching, and feelings of personal responsibility. Graduate researchers were trained on how to properly administer all in person interviews and measures, which included reviewing instructions and follow-up questions under the supervision of an experienced graduate researcher prior to administering the interview.

Appendix D

Worry Intensity Rating Scale and Structured Interview

1. I'm worried about burnout.

0 1 2 3 4 5 6 7

Not at all Extremely

Follow-up:

0 - 2 → Can you talk a little about how your current experience is in your placement and why you are not especially concerned about burnout?

3 - 7 → (*3-4*: *You're not very worried, but…*) Can you give some examples of what you're particularly worried about burning you out next semester?

2. I am worried about time management.

0 1 2 3 4 5 6 7

Not at all Extremely

Follow-up:

0 - 2 → Can you talk about how you've been managing your time in your placement this semester? What strategies work best for you?

3 - 7 → How has managing your time in your placement been going for you so far? What do you think will be most difficult next semester?

3. I'm worried about classroom management.

0 1 2 3 4 5 6 7

Not at all Extremely

Follow-up:

ALL → How is it going for you in your classroom now? What behaviors do you most struggle with?

0-2 → What has helped you prepare for next semester?

3-7 → (***3-4****: I see you're not very worried, but...*) What do you think will be the hardest about next semester?

4. I'm worried about meeting the various responsibilities of my role.

0 1 2 3 4 5 6 7

Not at all Extremely

Follow-up:

0 - 2 → Can you talk a bit about the responsibilities you'll have next semester and how you plan to meet them?

3 - 7 → (*3-4: Though you're not very worried…*) What responsibilities will be difficult to meet? What will be easiest?

5. I'm worried about having apathetic students.

0 1 2 3 4 5 6 7
Not at all Extremely
Follow-up:
0 - 2 → How are your students so far? What would it mean to you if you did have an apathetic student?
3 - 7 → What would an apathetic student look like to you? What would worry you most about them?

6. I'm worried about the teacher workload.

0 1 2 3 4 5 6 7
Not at all Extremely
Follow-up:
0 - 2 → How have you handled the workload so far? Do you see it changing next semester?
3 - 7 → How has the workload been this semester? (*3-4: I know you're not that worried, but…*) Can you give some examples of what you think will be most challenging?

7. I'm worried about "messing up."

0 1 2 3 4 5 6 7
Not at all Extremely
Follow-up:
ALL → (*0-3: I know you're not too worried, but…*) What would "messing up" look like to you? Has anything like that happened so far? [*base off their wording of "messing up"*] How did you deal with that?

Appendix E
Confirmatory Factor Analysis Results

When a CFA and EFA are conducted on the same sample, a split sample method should be used. However, due to the small sample size, the CFA and EFA were conducted on the same sample. Thus, further research would need to be done on a larger sample in order to validate the findings. A three-factor solution was derived from the EFA, however other analyses suggested that a one-factor solution was the best fit as it accounted for the majority of the variance and was the most parsimonious. Based on these EFA results, CFAs were run on the one-factor solution and the three-factor solution. In the one factor solution, all seven items are included on one factor. In the three-factor solution, item 3 (classroom management) and item 4 (meeting responsibilities) load onto factor 1. Factor 2 contains item 1 (burnout), item 2 (time management), and item 6 (teacher workload). Finally, factor 3 includes item 5 (apathetic students) and item 7 (messing up). The fit indices from the two models are presented in the table below. Neither solution is exceptionally better than the other in terms of the fit indices and more research should continue to investigate the model fit on a larger sample.

Model Fit Indices Comparisons

Fit Index	1 Factor Model	3 Factor Model
Chi-Square P-Value	0.04	.10
Comparative Fit Index (CFI)	.77	.87
Tucker-Lewis Index (TLI)	.65	.74
AIC	1553.67	1552.03
BIC	1583.22	1587.91
Root Mean Square Error of Approximation	RMSEA = .11 p = .087	RMSEA = .10 p = .19
Standardized Root Mean Square Residual	0.09	.07

Appendix F

Detailed Description of Reasoning for Each Situation

For worry situation 1 (Burnout) the interview codes demonstrated that a majority of intern-teachers mentioned having a past experience with burnout (82%). More specifically, about half of the intern-teachers (50.8%) had a negative past experience with burnout, 24.6% had a vicarious experience with burnout, and 6.6% had a positive experience (See Table 7). Most intern teachers also viewed burnout as an unchanging problem (54.1%) while 42.6% saw burnout as changeable, and 3.3% did not view burnout as a problem. About half of the intern teachers (52.5%) viewed burnout as being caused, maintained, or changed by external forces, 31.1% viewed burnout as something that they themselves caused, maintained, or could change, and 16.4% viewed burnout as being caused, maintained, or changed by a combination of external and personal forces. In terms of references to uncertainty and multiple roles, a large majority of intern teachers mentioned uncertainty in their responses (73.8%) and a little over half of the intern teachers (55.7%) mentioned multiple roles.

For worry situation 2 (Time Management) the interview codes demonstrated that over half of the intern-teachers (62.3%) had a negative past experience with time management, 4.9%% had vicarious experience with time management, 4.9% had no experience, and 27.9% had a positive experience (See Table 8). Most intern teachers also viewed time management as a changeable problem (67.2%) while 31.1% saw time management as unchanging, and 1.6% did not view time management as a problem. 41% of the intern teachers viewed time management as being caused, maintained, or changed by external forces, 37.7% viewed issues with time

management as something that they themselves caused, maintained, or could change, and 21.3% viewed time management as being caused, maintained, or changed by a combination of external and personal forces. In terms of references to uncertainty and multiple roles, a large majority (72.1%) of intern teachers mentioned uncertainty in their responses and the same proposition mentioned multiple roles.

For worry situation 3 (Classroom Management) the interview codes demonstrated that over half of the intern-teachers (62.3%) had a negative past experience with classroom management, 1.6% had vicarious experience with classroom management, 1.6% had no experience, and 34.4% had a positive experience (See Table 9). Most intern teachers also viewed classroom management as a changeable problem (65.6%) while 29.5% saw classroom management as unchanging, and 4.9% did not view classroom management as a problem. Just under half of the intern teachers (45.9%) viewed classroom management as being caused, maintained, or changed by external forces, 21.3% viewed classroom management as something that they themselves caused, maintained, or could change, and 32.8% viewed classroom management as being caused, maintained, or changed by a combination of external and personal forces. In terms of references to uncertainty and multiple roles, a large majority of intern teachers mentioned uncertainty in their responses (85.2%) and a similarly large majority mentioned multiple roles (80.3%).

For worry situation 4 (Meeting the Various Responsibilities of a Teacher) the interview codes demonstrated that 34.4% of the intern-teachers had a negative past experience with meeting responsibilities, 19.7% had vicarious experience, 18% had no experience, and 27.9% had a positive experience (See Table 10). Most intern

teachers also viewed meeting responsibilities as a changeable problem (57.4%) while 34.4% saw meeting responsibilities as changeable, and 8.2% did not view meeting responsibilities as a problem. About half of the intern teachers (54.1%) viewed meeting responsibilities as being caused, maintained, or changed by external forces, 26.2% viewed meeting responsibilities as something that they themselves caused, maintained, or could change, and 19.7% viewed burnout as being caused, maintained, or changed by a combination of external and personal forces. In terms of references to uncertainty and multiple roles, a large majority of intern teachers mentioned uncertainty in their responses (83.6%) and multiple roles (67.2%).

For worry situation 5 (apathetic students) the interview codes demonstrated that about one-third of the intern-teachers (32.8%) had a negative past experience with apathetic students, 32.8% had no experience, 34.4% had a positive experience, and no intern teachers reported a vicarious past experience (See Table 11). Most intern teachers also viewed apathetic students as a changeable problem (70.5%) while 21.3% saw apathetic students as unchanging, and 8.2% did not view apathetic students as a problem. About one-third of the intern teachers (32.8%) viewed apathetic students as being caused, maintained, or changed by external forces, 39.3% viewed apathetic students as something that they themselves caused, maintained, or could change, and 27.9% viewed apathetic students as being caused, maintained, or changed by a combination of external and personal forces. Unlike other situations, in situation 5 a large majority of intern teachers did not reference multiple roles in their responses (88.5%). A more even split occurred for mentions of uncertainty with 59% mentioning uncertainty in their response and 41% not mentioning uncertainty.

For worry situation 6 (Teacher Workload) the interview codes demonstrated that about half of the intern-teachers (47.5%) had a negative past experience with the teacher workload, 27.9% had vicarious experience, 9.8% had no experience, and 14.8% had a positive experience (See Table 12). Most intern teachers also viewed the teacher workload as a changeable problem (62.3%) while 37.7% saw the workload as unchanging. Most intern teachers (78.7%) viewed the teacher workload as being caused, maintained, or changed by external forces, 9.8% viewed the teacher workload as something that they themselves caused, maintained, or could change, and 11.5% viewed the teacher workload as being caused, maintained, or changed by a combination of external and personal forces. In terms of references to uncertainty and multiple roles, a large majority of intern teachers mentioned uncertainty in their responses (85.2%) and multiple roles (77%).

For worry situation 7 (Messing Up) the interview codes demonstrated that about one-third of the intern-teachers (31.1%) had a negative past experience with messing up, 8.2% had vicarious experience with messing up, 21.3% had no experience, and 39.3% had a positive experience (See Table 13). Most intern teachers also viewed messing up as a changeable problem (50.8%) while 21.3% saw messing up as unchanging, and 27.9% did not view messing up as a problem. A majority of the intern teachers (68.9%) viewed messing up as something they themselves caused, maintained, or could change, 6.6% viewed messing up as something that was caused, maintained, or changed by external forces, and 24.6% viewed messing up as being caused, maintained, or changed by a combination of external and personal forces. In terms of references to uncertainty and multiple roles, 59% of intern teachers

mentioned uncertainty in their responses while 62.3% mentioned multiple roles.

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